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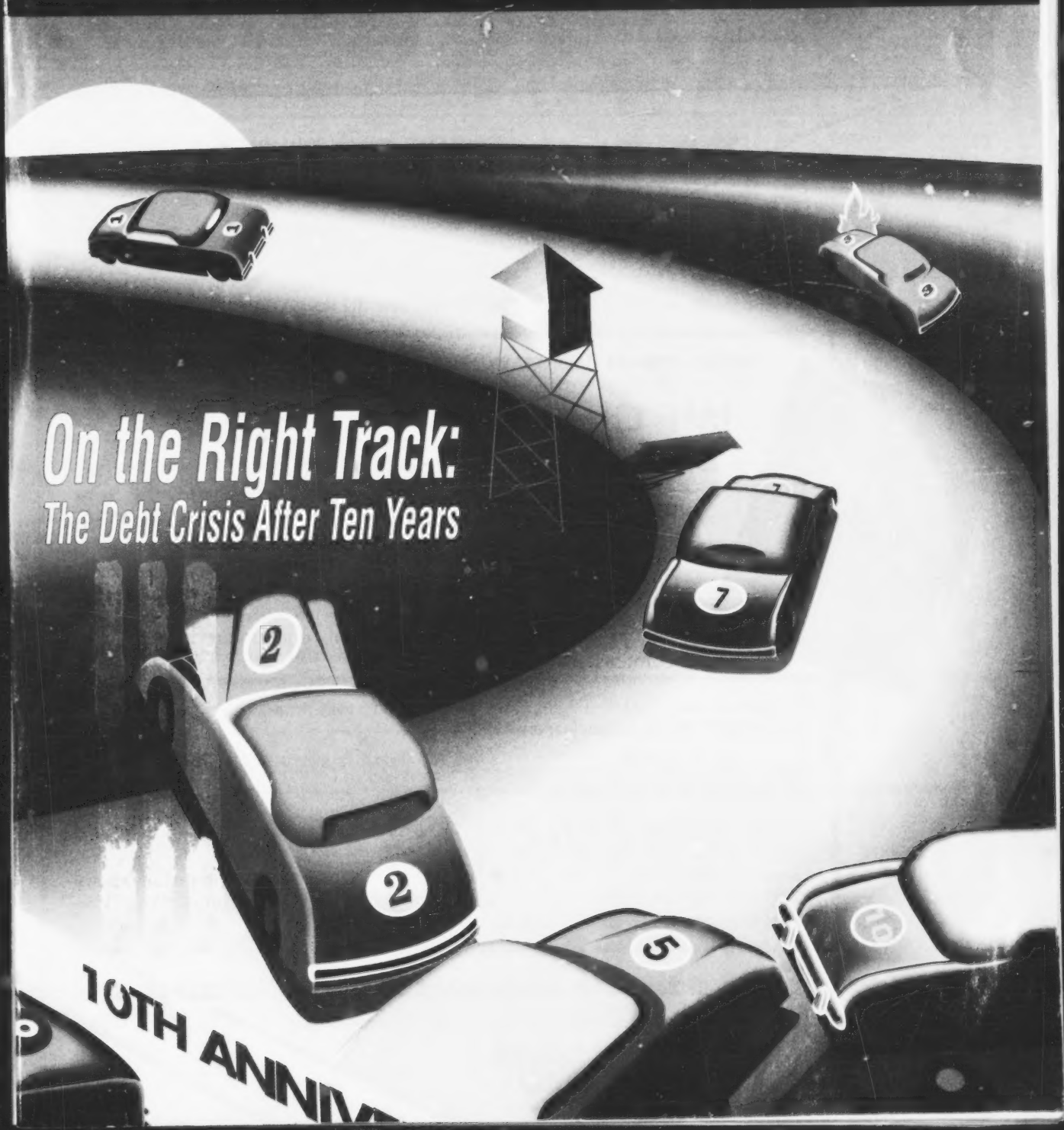
FINANCE & DEVELOPMENT

A QUARTERLY PUBLICATION OF THE INTERNATIONAL MONETARY FUND AND THE WORLD BANK



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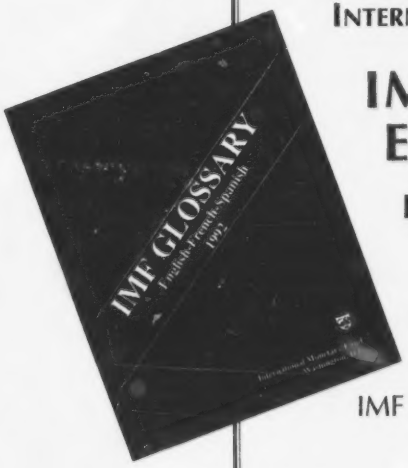

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READEX
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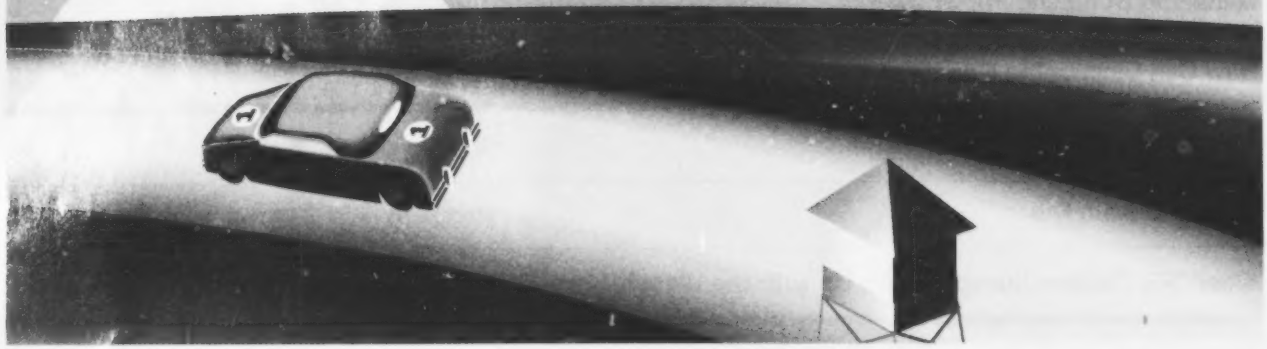
A Tenth Anniversary Report on the Debt Crisis

A number of middle-income developing countries have now put the debt crisis behind them, but for many others—especially the poorest—a great deal remains to be done

Masood Ahmed and Lawrence Summers



Ten years have passed since Mexico's inability to service its debts triggered a rapid succession of similar moratoria by other debtor countries and led to what has come to be known as the "debt crisis." A tenth anniversary is a good opportunity to take stock of how far we have come since then. It is also an occasion to reflect upon the lessons learned, as a way of better understanding both the mistakes that led up to the crisis and the prolonged and still only partially complete process that was adopted to resolve it.

What have we learned?

One must extract lessons with a great deal of humility. If the debt crisis has taught anything, it is the fallibility of forecasts. It was not only Citibank President Walter Wriston, but a sizable part of the world's financial and economic community that believed in the late 1970s that sovereign countries did not go bankrupt. Even after the crisis broke, the pessimists did not predict the kind of stagnation suffered by the debtor countries during the 1980s, and many people dismissed the disruption in payments as simply a liquidity problem. As recently as five years ago, few could have predicted that much of Latin America would today be wrestling with the question of how to manage large-scale capital inflows. In that spirit of humility, listed below are ten key lessons.

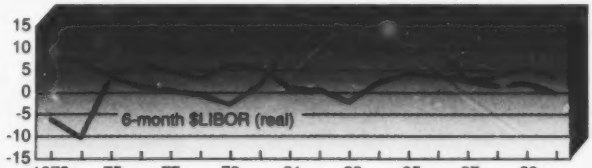
(1) ***Systemic thinking is crucial to avoiding bad lending decisions.*** For much of the 1960s and 1970s, the growth of income in most countries significantly exceeded interest rates. In this environment, it was difficult for a country to appear insolvent. Even nations that borrowed to pay all of their interest bills could have improving debt indicators. Neither lender nor borrower questioned what would happen if the international economic environment changed dramatically, as it did with the sudden and sharp disinflation in the industrialized world in the early 1980s. As Chart 1 illustrates, growth collapsed just as real interest rates rose sharply.

One after another, countries to whom bankers had been eager to lend only months before ran into problems servicing their external obligations. Indeed, within two years of Mexico's default, 30 developing countries —representing half of developing country debt—were failing to service their debt as originally scheduled (see Chart 2). The pervasiveness of the debt problem is testimony to the dominant role played by a changed international economic environment. It also demonstrates the folly of assuming, as some prominent bankers did at the time, that simply spreading exposure across developing countries was an adequate way to diversify risk.

(2) ***Heavy borrowing that is not accompanied by productive investments is a disaster for creditor and debtor alike.*** If the money borrowed during the 1970s had been used wisely—that is, to fi-

Chart 1

Growth plummeted as real interest rates soared



Sources: *World Tables* (World Bank); *International Financial Statistics* (IMF).

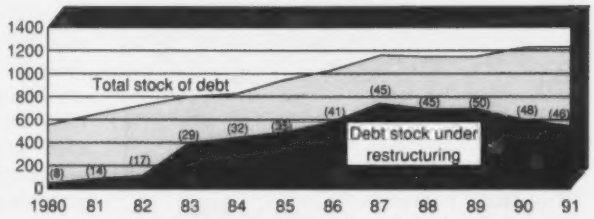
[1] Weighted rate in 34 severely indebted developing countries (Algeria, Argentina, Bolivia, Brazil, Burundi, the Congo, Costa Rica, Côte d'Ivoire, Ecuador, Egypt, Ethiopia, Ghana, Guinea-Bissau, Guyana, Honduras, Kenya, Madagascar, Malawi, Mauritania, Mexico, Morocco, Niger, Nigeria, Peru, the Philippines, São Tomé and Príncipe, Sierra Leone, Somalia, Syrian Arab Republic, Uganda, Uruguay, Venezuela, Zaïre, and Zambia).

nance high-return investments, or to underwrite necessary structural changes—debtor countries could have ridden out the disinflationary storm of the early 1980s. Indeed, some countries—such as Korea, whose external debt went up ninefold over the 1970s—followed precisely such a strategy and were able to stay their development course through the 1980s. Unfortunately, however, in too many other developing countries, the easy availability of international credit in the 1970s was used to postpone, rather than catalyze, necessary economic reforms.

Chart 2

Soon after Mexico's default, debt restructurings took off

(In millions of dollars)



Source: Debtor Reporting System (World Bank).

Note: Numbers in parentheses refer to total number of countries that are subject to restructuring arrangements. New entrants are determined by the formal initiation of a restructuring agreement.

Telltale signs that all was not well were rationalized by both borrowers and lenders in a willing suspension of disbelief. Neither side carefully examined what was happening to fiscal deficits and public enterprise losses; nor was the connection made between why residents were transferring funds abroad in ever increasing amounts, even as foreign creditors transferred resources in to shore up sagging public finances. The problem was exacerbated by the paucity of information and poor bookkeeping on how the borrowed funds were actually being used. The net result was to build up the "liabilities" side of the debtor country's "balance sheet," without a commensurate increase in the stock of productive "assets." Sorting out this disequilibrium would preoccupy national policymakers and international agencies for the subsequent decade.

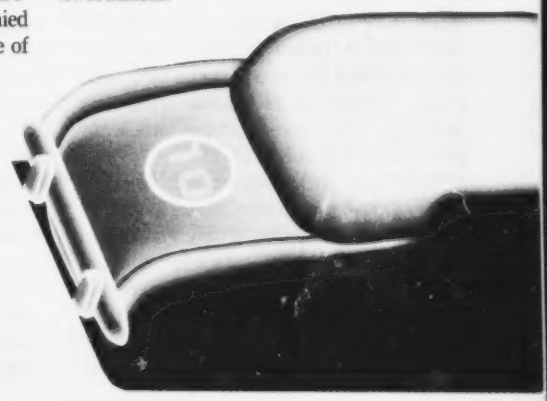
(3) ***Countries that "opted out" of the international financial system have generally done worse as a result.*** During the last decade, a few countries tried at various times to resolve their debt problems unilaterally by opting out of the international financial system. They stopped servicing their external obligations and broke off relations with their creditors. Sometimes, this was preceded by a breakdown of negotiations on a stabilization and adjustment program with the international financial institutions. In the end, these actions have generally proved detrimental to the debtor country involved. One reason is that the financial costs associated with the building up of arrears has been added to the cost of delaying much needed adjustment—these costs include reduced trade and interbank credit lines, as well as higher prices (the "spreads") that have had to be paid for these lines. But even more important and damaging have been the adverse effects of isolationist action on domestic confidence. Trying to get the best deal within the mainstream, with the support of official development agencies, seems to be a more fruitful avenue for country action than trying to go it alone.

(4) ***Good national policies are the key to capital market access.*** The debt crisis was at least as much a symptom as a cause of bad economic performance. It is important to emphasize that private capital has continued to flow during the 1980s to a number of developing countries, notably the prudently managed economies of East Asia. For that region as a whole, net resource flows from private sources have been positive in every year of the 1980s, and foreign equity flows have gone up eightfold over the decade. A more recent phenomenon is the return to capital market access of a number of the debt-distressed Latin American countries, including Argentina, Brazil, Mexico, and Venezuela. It is not a coincidence that among these, Mexico, the country with the strongest track record in economic management in the region, is also by far the largest recipient of private portfolio flows to developing countries.

Underlying this widening access to international capital markets has been a revolution in economic policies across much of the developing world. Fiscal deficits and inflation are down, and exchange rates reflect market realities rather than national pride. Macroeconomic stabilization has been accompanied by deep-rooted structural change. The role of government is being greatly curtailed, trade barriers have come down, and the privatization of public enterprises is underway in virtually every World Bank borrower. One of the painfully learned lessons of the last several decades is that sustained growth depends on governments choosing an appropriate economic role—doing those things that governments need to do, such as providing infrastructure and basic human services, but leaving to the market that which the market can do best.

(5) ***Economic adjustment takes time and things often get worse before they get better, so attention to the political and economic sustainability of reform is in the interest of both the creditors and debtors.*** It is now clear from the experience of Chile, Ghana, and Mexico, among others, that market friendly policies can help to improve the economic performance of economies previously hamstrung by a plethora of controls and distortions. But dismantling controls and opening up an economy takes time and involves substantial dislocations. This means that output at first declines, before gradually increasing—a process that creates enormous political pressures to reverse reform policies. The situation is greatly exacerbated when adjustment coincides with import cutbacks, which are caused by the need to use scarce foreign exchange to service foreign debts.

For policymakers, import compression during adjustment poses a cruel dilemma. Either they can seek to maintain consumption and reduce capital goods imports, thereby compromising the long-run economic viability of reforms, or they can seek to reduce consumption, even as economic dislocations increase, thereby risking political instability. Since creditors have a strong stake in the success of reform efforts, it may well be in their collective interest to avoid import compression. Yet no individual private creditor has an incentive to accept debt reduction or to put in new money; each would prefer to "free ride" on the activities of other creditors. This is where the presence of official lenders, with a longer-term stake in the debtor country, makes a vital contribution by limiting the need for initial cutbacks in consumption without distorting the short-term adjustment process to regain creditworthiness.



Trade deficits turn to surpluses, but economic growth turns down

	External debt		Trade balance (As percent of GNP)		Real GDP growth rate	
	$ billion	(As percent of GNP)1982	1979-82	1983-86	Avg. 1973-82	Avg. 1982-90
Argentina	43.6	83.9	0.22	4.73	0.9	0.1
Bolivia	3.3	114.8	0.71	0.08	2.5	0.7
Brazil	92.9	34.4	(1.32)	4.06	5.1	3.5
Chile	17.3	76.7	(5.52)	2.19	3.6	5.3
Colombia	10.3	26.9	(1.60)	1.09	4.9	0.3
Côte d'Ivoire	7.9	111.4	(5.20)	8.28	4.5	4.2
Ecuador	7.7	66.9	(0.27)	4.45	5.9	2.1
Mexico	86.0	53.4	(0.75)	7.18	5.5	4.1
Morocco	12.5	84.8	(13.45)	(8.93)	6.3	1.0
Peru	12.3	49.7	(0.40)	2.09	3.0	-0.1
Philippines	24.6	62.5	(4.79)	(0.59)	5.4	1.2
Venezuela	32.2	41.4	2.59	7.24	2.0	1.7
All developing countries	883.3	33.81	(0.63)	(0.61)	4.2	3.5

Sources: *World Debt Tables 1991-92*; *World Tables 1992*.

(6) ***There is a compelling need for official action to overcome free rider problems that complicate debt reschedulings and reductions.*** The problems of free-riding and holdouts among the banks have exacerbated coordination difficulties that would have resulted simply from the number and diversity of lenders. In purely domestic contexts, bankruptcy laws exist because of the recognized problem of dealing with conflicts among creditors, and between creditors and debtors. Without such laws regulating sovereign lending, there is a clear case for government action to overcome free-rider problems. This critical point was recognized when the crisis broke and the world financial system seemed to be at risk. But during the heyday of *laissez faire* enthusiasm during the mid-1980s, at least some officials lost sight of it.

The free rider issue is well recognized in the structure of the Brady Plan, which has provided the framework for commercial debt reduction agreements since 1989. The "menu" approach enables creditor banks with different preferences to choose the debt reduction option most suited to their needs, while the comprehensive nature of these deals minimizes the possibility of free riding by a small group of creditors at the expense of the other participants (see accompanying article by John Clark and Eliot Kalter).

This comprehensive approach is based on the recognition that market buybacks (the repurchase for cash of debt) of only a small part of the outstanding debt stock, even at a discount to face value, generate few benefits for the debtor country, because they raise the probability that the country will repay its debt, and thus the market value of the country's remaining outstanding debt. Confronted with a steadily increasing price for their debt obligations, countries that are already financially strained will soon reach a point where further buybacks are economically unviable, rendering this mechanism unsuited for large-scale reductions in debt stock. In the same way, there is a real danger that partial debt-equity swaps may benefit creditors who hold on to their debt, without doing a great deal for debtor countries.

(7) ***Treating the debt crisis purely as a liquidity problem delayed the search for a stable and real solution.*** In the early years of the debt crisis, many observers felt that the indebted countries were suffering from a liquidity—rather than a solvency—problem, and thus the official workout strategy relied on providing new funds to overcome the temporary shortage of finance. But in many instances, commercial lenders were unwilling to provide these new funds, essentially because they were uncertain about the prospects of recovering this money even in the medium term. It was only the debt reduction deals under the Brady Plan that finally helped to reduce this uncertainty by removing one part of the contingent claims on future public finances. More generally, this experience has demonstrated the weakness of the basic liquidity-solvency distinction as applied to the debt crisis. This lesson is well learned now, but the cost of delay has been to put development on hold for a decade in many of these countries (see table). A lesson for the future is the importance of acknowledging reality sooner.

(8) ***Debt reduction is sometimes necessary but only works well when accompanied by good economic policies.*** The main benefit of a Brady-type debt reduction deal for a debtor country is that it eliminates the contingent liability represented by the unserviced part of the old debt. The debt reduction thus reduces uncertainty about the returns to any new investment and helps to create the climate of confidence for the private sector to undertake new investments. These benefits are best captured in countries where an established track record of sound policies and prudent economic management have already lifted the other impediments to renewed private sector confidence. Such an established record does not yet exist in some of the severely indebted middle-income developing countries that have not concluded a Brady-type deal with their commercial creditors. Waiting until it does will maximize the potential benefits of the deal to the country and ensure the productive use of the resources needed to finance the transaction.

(9) ***Building risk-sharing contingencies into financial contracts is much less costly than renegotiating contracts when things go wrong.*** The essence of the workout process during the 1980s was to agree on the terms for the ex-post rewriting of loan contracts to share the losses associated with an outcome that had turned out to be worse than either lender or borrower had envisaged. The process was made more difficult by the fact that virtually none of the original loan contracts had such "downside" contingency clauses, meaning that all the contracts had to be renegotiated ex-post and without a frame of reference that such a clause would have provided. Moreover, the predominance of syndicated lending to sovereign borrowers in the 1970s meant that the risk-sharing features of other forms of international finance, notably foreign direct investment and other equity flows, had been largely foregone.

The recent boom in portfolio flows to emerging stock markets in these countries shows that at least one set of international investors has learned from this experience. It is not clear, however, that many developing countries have fully realized either the potential for, or the implications of, using a more diversified set of financial instruments.

(10) ***External finance for investment in low-income countries must come largely from official sources.*** A key lesson of the debt crisis is that commercial banks are an inefficient instrument for channeling long-term investment finance to the poorest countries. During the next decade, their role in these countries is likely to focus on the provision of trade and short-term credit, and correspondent banking relationships to facilitate international trade arrangements, as well as limited-recourse project finance, where the re-

payments on the loan are linked to the success of the investment project financed by the money. Other commercial sources will also run up against internal, or externally imposed, regulatory or creditworthiness constraints.

Yet the financing needs of these countries continue to be pressing. During the past decade, per capita incomes in the severely indebted low-income countries have fallen by a fifth to well short of a dollar a day in 1991. Raising incomes from these pitiful levels will require both better economic management and an injection of foreign capital for investment in economic development. Because many of these countries are not likely to be creditworthy for a long time, the real need is to increase concessional financing. A doubling of all the net resource flows to developing countries last year would add a little over $16 billion to the aid bill of the industrialized world—just 1 percent of what the world spends on defense each year. It is also a small price to pay for reversing the decline in health, nutrition, and educational standards that has characterized so many of these countries during the 1980s.

Is the debt crisis over?

The preceding lessons are vital not only to avoid future debt crises but also to tackle the substantial unfinished agenda from the 1980s. Certainly, considerable progress has been made. National and international actions have helped avert any serious damage to the international financial system, which was a real concern in the early aftermath of the crisis. With the recently announced commercial debt reduction agreements for Argentina and Brazil, the normalization of external creditor relations is now well advanced for the middle-income developing countries. And sustained official financial support on concessional terms has complemented the very limited domestic savings of the poorest countries, ensuring that their basic import needs have continued to be met.

But the debt crisis is far from over for more than 40 developing countries, which continue to have difficulties in servicing their debt as originally contracted. In particular, much remains to be done for the poorest developing countries, 26 of which are classified as severely indebted. For these countries—mostly in Sub-Saharan Africa—official support has been strong through the 1980s, in terms of the provision of both new money and progressively more concessional debt relief. But external viability has remained elusive. On average, these countries have been allocating a quarter of their exports to debt servicing, although this still only enables them to pay half the scheduled amount.

Under any plausible future scenario, many of these countries will regain external viability only if some portion of their existing—largely official bilateral—debt is written down, reflecting the creditors' acceptance of a reduction in the stock of debt outstanding. Bringing scheduled debt-service payments to a level that can reasonably be expected to be paid would help reduce uncertainty and make new creditors feel more confident that their contractual arrangements were likely to be honored. Debt relief for these countries is thus a high-priority item. But the actual amounts required will have to be determined on a case-by-case basis and assessed within the context of the overall economic and structural adjustment program. It is clear, however, that in many countries, this relief will need to go beyond the 50 percent reduction in the present value of debt service that has characterized some of the most recent agreements reached with official bilateral creditors under the auspices of the Paris Club.

As for the remaining severely indebted middle-income countries, the objective remains to restore access to private international capital markets. The recent experience of a number of major Latin American countries, including Argentina, Brazil, Chile, and Mexico, has shown that private capital can flow back in substantial amounts under the right national and international conditions. Foremost among these is a sustained track record of economic and structural reform. Investor confidence has also been helped by the successful completion—or imminent conclusion—of Brady-type agreements for reducing part of the existing commercial bank debt. A similar sustained track record of sound national policies, complemented, in some cases, by an agreement on commercial debt reduction, should facilitate the return to market access for the dozen or so middle-income countries still classified as severely indebted. The same considerations also apply to some of the states of the former USSR, whose current debt-servicing problems have sharply curtailed access to private international capital markets.

In sum, the debt crisis may no longer be the principal preoccupation of the international commercial banks, but it is far from over for many of the countries involved, among them, some of the poorest. For a number of these countries, a combination of growth and cash flow relief through rescheduling should result in a resumption of normal creditor relations by the mid-1990s. For others, however, a return to external viability can only be achieved in conjunction with some reduction of their existing debt obligations. For all of them, the key to both improved economic performance and continued support from the international financial community will be sound economic policies. And the importance of these policies will increase in the 1990s, as international capital markets remain tight and the competition for concessional finance becomes stronger. Moreover, the tolerance for wrong policies will be sharply reduced in a world where capital account liberalization and financial market integration make large sudden outflows of capital a real constraint on government action.

Sound policies need to be nurtured by a supportive international economic environment. This means that the developing world's recovery and growth prospects would be helped by reducing protectionism in the OECD countries. Cutting current levels of industrial country protection in half would lead to a $50 billion increase in developing country exports—not including the sizable benefits to consumers in the developed world. It also means that developing countries, as price takers in the international capital markets, would benefit from industrial country policies that would bring down real interest rates from their current high levels. As long as real interest rates are above the growth rates for some developing countries, any net borrowing must necessarily worsen their debt indicators. Thus, actions by the industrial countries to raise their own level of saving, thereby reducing pressure on international markets, would do much to improve the creditworthiness and financing prospects of the developing countries in the decade ahead. ■

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Recent Innovations in Debt Restructuring

Debt and debt service reduction, together with sound policies, has strengthened the economic prospects of a number of countries

John Clark and Eliot Kalter

The recent agreements with commercial banks on debt reduction packages for Argentina and Brazil and the implementation by Paris Club creditors of a menu of enhanced concessions in reschedulings for low-income countries have made headlines. These are, however, only the latest steps in a series of debt restructuring innovations aimed at facilitating the resolution of debt servicing problems for countries carrying out strong adjustment and reform programs. This article reviews the experience with these innovations and looks at prospects for the many developing countries that still face heavy debt burdens.

The shift in approach toward debt reduction since the late 1980s reflected widespread appreciation that the existing strategy needed to be reinforced. Expectations in the early years of the debt crisis that debtor countries would be able to resume normal debt servicing within a short period of time were not borne out. Meanwhile, with repeated reschedulings of principal and consolidations of interest, the stock of debt continued to grow, impairing domestic confidence and undermining countries' adjustment efforts. Moreover, the refinancing of interest on bank claims through new money packages became increasingly difficult to negotiate as the financial position of commercial bank creditors strengthened.

Bank debt restructurings

Against this background, in March 1989, US Treasury Secretary Brady proposed that official support be provided to countries to finance the restructuring of commercial bank debt through comprehensive packages involving a "menu" of market-based debt and debt service reduction options. The main condition for this support was that the debtor be implementing a strong set of adjustment and reform policies that, combined with debt operations, would provide for substantial progress toward external viability. Under this approach, banks can choose among a range of options previously agreed between the borrower and a committee of the country's leading bank creditors. Among the options, buybacks have allowed banks to exit by selling their claims back to the borrower at a discount. Under more complex bond exchanges, existing loans have been swapped for bonds with a reduced principal amount (discount exchanges), or predetermined sub-market interest rates (par exchanges). In addition, the repayment period on the remaining obligations has been extended, reaching up to 30 years.

To encourage creditors to participate in debt exchanges, they were given the opportunity to convert their loans into less easily rescheduled securities and to attach collateral accounts—often funded with the assistance of official creditors—to guarantee the payment of the principal and/or a portion of the interest on the new bonds. Because the collateral is refundable (or can be drawn to cancel liabilities), such guarantees provide an additional effective reduction in claims payable to banks by effectively prepaying a portion of the remaining obligations through the collateral accounts.

The menu approach has facilitated nearly universal participation by banks in debt packages and has lowered costs by allowing banks to select options that best suit their particular tax, regulatory, and accounting situations, as well as their views on the future path of interest rates and the country's prospects. Experience has shown that despite the variety of instruments and menus, in general, the amount of debt reduction achieved through each of the packages has been broadly consistent with—and generally somewhat greater than—what might have been achieved through buybacks at the secondary market prices prevailing when agreement was reached.

Implementation of these debt restructurings has been time-consuming, but progress has been fairly steady. Agreements have now been reached covering about three-fourths of bank claims on countries that had experienced recent debt servicing difficulties. Packages have been completed for six countries—Costa Rica, Mexico, Nigeria, the Philippines, Uruguay, and Venezuela. A second package is in the process of being completed for the Philippines, while agreements in principle have been reached for Argentina and Brazil, and negotiations are in progress in number of other cases.

Taking the packages already completed, claims to be paid to commercial banks by debtor countries have been reduced in present value terms by about $38 billion since 1989, cutting these countries' medium and long-term bank debt by roughly two-fifths (see Table 1). Associated interest relief in relation to GDP has varied, depending, among other things, on the size of the bank debt involved, but has generally been around 1/2 of 1 percent of GDP for the major debtors. Required funding for these operations has totaled around $14 billion, of which the IMF and the World Bank, in connection with borrowers' eco-

Table 1

Bringing the debt down*

Commercial bank debt restructuring, 1987—June 1992

(In billions of US dollars)

	Debt restructured [1]	Debt reduction: Buy-back	Debt reduction: Discount exchange [2/3]	Debt-service reduction [3]	Pre-payments	Total reduction in claims payable to banks [4]
Bolivia (1987)	0.5	0.3	0.2	0	...	0.5
Chile (1988 and 1989)	0.4	0.4	—	—	—	0.4
Costa Rica (1990)	1.6	1.0	—	0.2	...	1.2
Mexico (1988 and 1990)	46.7	—	7.9	7.0	7.7	22.6
Mozambique (1991)	0.2	0.2	—	—	—	0.1
Niger (1991)	0.1	0.1	—	—	—	0.1
Nigeria (1991)	5.4	3.4	—	0.6	0.4	4.3
Philippines (1990 and 1992) [5]	5.2	2.6	—	0.7	0.5	3.9
Uruguay (1991)	1.2	0.6	—	0.2	0.1	0.9
Venezuela (1990)	13.5	1.4	0.5	2.7	1.7	6.3
Total	74.7	10.0	8.6	11.3	10.3	40.2
Of which: Since March 1989	70.3	9.4	7.3	11.3	9.8	37.8

Source: IMF staff estimates.

[1] Under debt and debt-service reduction operations; includes associated past due interest but excludes debt restructured under new money options.

[2] Excludes prepayment of principal and interest through guarantees.

[3] Adjusted for the impact of value recovery clauses.

[4] Does not include new debt incurred to finance these operations.

[5] Reflects impact of debt exchange expected to be completed after June 30, 1992.

nomic adjustment programs, have each lent around $2 1/4–$2 1/2 billion. The remainder has come from bilateral loans and grants and the countries' own reserves. Officially supported debt reduction has been complemented by a continued role for debt-equity conversions, with over $24 billion of debt converted under official schemes during 1989–91, bringing the total to about $40 billion since 1984.

In addition to the middle-income countries cited above, a number of low-income countries—in particular Bolivia, Mozambique, and Niger—have completed buybacks at deep discounts that have greatly reduced the commercial bank debt of these countries. Given the countries' generally weak external positions and low income levels, these operations have been financed with concessional resources. These countries have also benefited from various types of debt for development conversions (e.g., debt-for-environment, debt-for-health, and debt-for-education). However, for most low-income countries facing debt servicing difficulties, debt to commercial banks accounts for a relatively small proportion of the total, and the treatment of bilateral official debt, which often accounts for the preponderant share, is an important aspect of their efforts to regain external viability.

Bilateral official creditors

Over the past decade, bilateral official creditors have assisted developing countries encountering debt servicing difficulties through a wide range of instruments, including new financing through officially supported export credits and direct bilateral loans and grants, debt service restructuring, and bilateral ODA (official development assistance) debt forgiveness initiatives. A key feature of the approach taken by bilateral official creditors has been to exclude short-term debts and new (post-cutoff date) claims from reschedulings. This strategy—which has effectively given seniority to these claims—has been crucial to the continuation of new official support. As a result, net resource flows to developing countries from official creditors remained positive and even increased in many cases over the past decade. Moreover, resources were provided on increasingly concessional terms.

Notwithstanding these efforts, low-income countries in particular found increasing difficulties in meeting the terms of previous reschedulings. In addition, the growing need for cash-flow relief required increasingly comprehensive consolidations, which in turn contributed to a growth in the stock of debt. The Paris Club initially responded by lengthening the repayment periods for these countries from ten years to up to twenty years (and the grace periods from five years to up to ten years), beginning in 1987. A second and more decisive step was taken in late 1988, when Paris Club creditors adopted a menu approach with concessional options ("Toronto terms"). Through 1991, 20 debtor countries had obtained 28 reschedulings on Toronto terms, consolidating debt obligations of some $6 billion with an average grant element of over 20 percent on nonconcessional debt (see Table 2).

While reschedulings under Toronto terms brought some low-income countries closer to a graduation from the rescheduling process, creditors recognized that more far-reaching concessions would be required for most other low-income rescheduling countries to achieve a sustained improvement in their debt situation. Creditors agreed in December 1991 to implement a new menu incorporating enhanced concessions in reschedulings for low-income countries. This new menu provides for a 50 percent reduction (in net present value terms) of debt service payments consolidated on non-ODA debts and a graduated repayment schedule over 23 years, through either an outright cancellation of 50 percent of the consolidated claims or a rescheduling at concessional interest rates. The menu also includes the nonconcessional option available under Toronto terms. With respect to concessional loans, creditors agreed to graduate payments and to maintain concessional interest rates to achieve the same proportion of effective debt reduction.

To date, seven countries have benefited from the new rescheduling terms—Benin, Bolivia, Equatorial Guinea, Nicaragua, Tanzania, Togo, and Uganda. The amount consolidated under these terms has totaled about $1 3/4 billion, with an average grant element of around 45 percent on nonconcessional debt, reflecting the use of the nonconcessional option by some creditors.

Under the new approach, Paris Club creditors have continued their practice of rescheduling only those obligations falling due during a concurrent arrangement with the IMF. However, the agreements also provide for the possibility that the remaining stock of debt might be similarly restructured and reduced after a period of three to four years, provided that previous reschedulings are fully implemented, other nonmultilateral creditors grant comparable relief, and appropriate arrangements with the IMF are continued. The terms

Table 2

Official financing through Paris Club reschedulings

	1986	1987	1988	1989	1990	1991	1992 Jan.-June
	(Amount consolidated in billions of US dollars)						
Low-income countries 1/	9.2	1.5	1.2	3.0	2.8	0.9	0.9
Of which under:							
Toronto terms	—	—	0.5	2.0	2.8	0.2	—
Enhanced concessions	—	—	—	—	—	0.8	0.9
Middle-income countries	3.9	23.9	8.2	15.6	13.7	72.6	13.8
Of which:							
Poland and Egypt	—	15.4	—	—	10.4	57.8 2/	—
Cumulative total amount consolidated 3/	50.7	76.2	85.6	104.2	120.7	194.2	208.9
	(Number of reschedulings)						
Low-income countries 1/	12	7	9	13	10	4	5
Middle-income countries	4	10	6	11	8	12	5
Cumulative total number of reschedulings 3/	83	100	115	139	157	173	183
Cumulative total number of rescheduling countries 3/	40	42	43	50	52	55	55

Source: Paris Club Agreed Minutes; and IMF staff estimates.

1/ SAF/ESAF eligible.
2/ Total value of debt restructured.
3/ Cumulative since 1980.

of these operations have yet to be settled; nonetheless, creditors have in principle indicated readiness to provide a definitive resolution to the problem of bilateral official debt.

For middle-income countries, bilateral official debt usually accounts for a smaller share of total debt than for low-income countries and actions by bilateral official creditors on debt are less decisive in affecting these countries' medium-term prospects for viability. In light of the difficulties faced by some of these countries, since 1990 Paris Club creditors have granted heavily indebted lower middle-income countries longer repayment terms, while selectively permitting voluntary swaps of debt for local currency obligations, such as debt-for-nature swaps. These new terms have been obtained by 15 heavily indebted lower middle-income countries, helping to reduce their number to a point where an exit from the rescheduling process is now in sight. Others, however, continue to face uncertain prospects. The July 1992 industrial country economic summit communiqué encouraged the Paris Club to recognize the special situation of some highly indebted, lower middle-income countries on a case-by-case basis.

In the meantime, bilateral official creditors have also dealt with the exceptional situations of Poland and Egypt. In each case, the Paris Club agreed to restructure the entire stock of debt (totaling a combined $58 billion) and to reduce the present value of the debt by 50 percent through a menu of options. An important feature of both agreements is that they provide for staged implementation, with some reduction taking place at the outset and the remainder taking place based on developments under the IMF arrangements supporting these countries' adjustment efforts.

Future prospects

The combination of officially supported debt reduction, extended repayment schedules, and strengthened policy implementation has brought impressive and hopefully lasting results in a number of middle-income debtor countries. With a return to more normal creditor/debtor relations, costly and difficult concerted refinancing exercises are no longer needed, arrears have been eliminated, and investor confidence has been restored. As a result, discounts on the debt of these countries in the secondary market have declined, access to private financing (mainly through securities markets) has increased significantly, capital flight has been reversed, and growth prospects have improved. Mexico, Chile, and Venezuela have been in the forefront of this process of market re-entry; recently, Argentina and Brazil have also been able to gain access to sizable flows, even though they have yet to finalize debt restructurings.

For heavily indebted low-income countries, the new approach by Paris Club creditors provides the potential means for countries to exit from the rescheduling process. Some are already on the verge of achieving that goal, although they will continue to rely on appropriate concessional financing. For others, however, as well as for some lower middle-income countries, the current debt burden is such that their balance of payments situation will still remain difficult over the medium term.

Despite the benefits of debt reduction, the debt burdens of most restructuring countries remain significant. The authorities of these countries must continue to implement sound macroeconomic policies—complemented by further structural measures where necessary—to maintain confidence and ensure that new flows will be appropriately channeled into productive investment. A number of countries that have been experiencing continued debt-servicing difficulties have yet to gain access to the new restructuring terms potentially available to them on their commercial bank and bilateral official debt. For some of these countries, a renewed adjustment effort will be needed to address the internal and external imbalances that constrain their growth prospects. The favorable impact that the combination of strengthened policy implementation and the broadened menu of restructuring options have already had on the prospects of some countries demonstrates the benefits that potentially await them. ■

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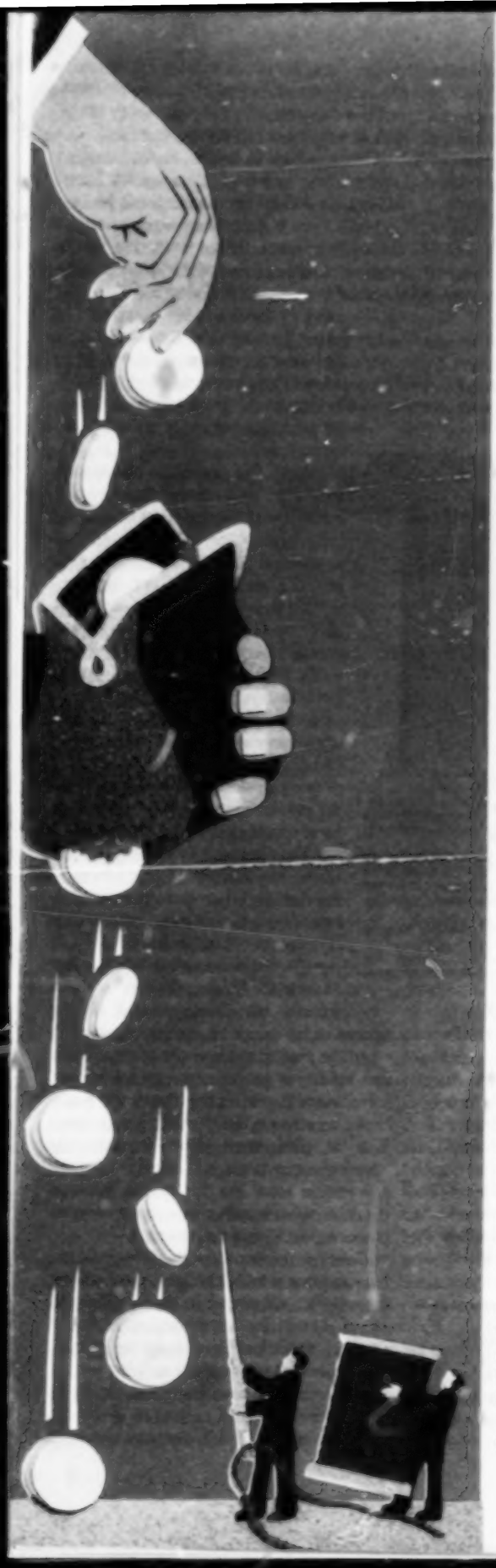


Managing Domestic Public Debt

Domestic public debt of externally indebted developing countries increased sharply during the 1980s. How this debt is managed can help or hurt adjustment programs

Pablo Guidotti and Manmohan S. Kumar

Ever since the onset of the debt crisis in 1982, a great deal of attention has been focused on the external debt of developing countries—both in terms of the ability of governments to service the debt and the sustainability of economic policies—but domestic public liabilities have gone largely unnoticed.

In the past few years, however, policymakers and academics have begun to shift their interest to the domestic front, troubled by the substantial growth of domestic public debt throughout the 1980s following a period of relative stability. For some countries—particularly those already shouldering heavy external debt loads—domestic debt now is close to, or exceeds, 25 percent of GDP. A few (Argentina and Brazil) have even run into domestic debt-servicing problems since 1988, forcing them to reschedule a significant portion of outstanding domestic debt on a nonmarket basis.

As the situation worsens, it is increasingly clear that how a country manages its domestic—and not just its external—debt may well determine the success or failure of its economic adjustment program, as both have a claim on government resources. Yet, to date, few studies have probed this area. For that reason, we recently undertook a study that explored the extent to which domestic public debt has grown, the reasons behind its sudden growth, how domestic and external debt interact with a country's current and anticipated fiscal stance, and how domestic debt can be better managed. This article takes a look at the results.

Evolution of public debt

For the 15 developing countries with the heaviest external debt loads—Argentina, Bolivia, Brazil, Chile, Colombia, Côte d'Ivoire, Ecuador, Mexico, Morocco, Nigeria, Peru, the Philippines, Uruguay, Venezuela, and Yugoslavia—the 1980s have meant a steady climb in domestic public debt. The average ratio of domestic public debt to GDP for this "group of 15" (or G-15) rose from 10 percent in 1981–82 to 16 percent in 1987–88, while total public debt rose from 33 percent of GDP to 54 percent. Moreover, for the four largest debtors (Argentina, Brazil, Mexico, and Venezuela), average domestic public debt increased to 18 1/2 percent of GDP from 12 percent during the same period (see chart).

This remarkable growth occurred at a time when external public debt was also rising sharply. The average ratio of external public debt to GDP for the G-15 increased by 15 percentage points from 1981–82 to 1987–88, and for the four largest debtors, the rise was more than 9 percentage points.

Although detailed data are available only up to 1988, considerable evidence indicates that the domestic debt situation has deteriorated since then, in contrast to the improvement on the external debt front, reflecting the successes of the external debt strategy. Particularly worrisome is the fact that the growth in domestic debt has not been limited to the G-15. Many other developing countries have also seen their domestic debt burdens rise sharply, especially in the last few years.

How were these increases possible and what was behind the rise? On the domestic side, the bulging liabilities largely reflected continued borrowing from the pri-

vate sector, while on the external side, they increased because of the assumption by the public sector of a large portion of private external debt, as well as rescheduled interest and amortization payments. At root, however, for the increase in both types of debt was a failure to make an adequate fiscal adjustment when access to new external financing came to a halt. Although a few G-15 countries managed to trim their budget deficits immediately following the onset of the debt crisis, the improvements were only short-lived. With few exceptions, the fiscal situation, on average, remained serious until the late 1980s. In the last two years, wide-ranging fiscal adjustment has taken place in a number of G-15 countries, such as Mexico and Argentina. At the same time external factors such as the fall in world interest rates have improved the outlook.

One key reason for the seriousness of the situation had been the low level, in some cases, declining ratio of tax revenues to GDP—partly a result of the external debt problem itself. As policymakers tried to turn current account deficits into surpluses to service external debt, they frequently restrained domestic demand, which, in turn, led to a smaller tax base. Increasing administrative and technical problems in tax assessment and the levying and collection of taxes did not help. In addition, inflation, because of collection lags, led to a reduction in real tax revenues.

Against this fiscal backdrop, the increase in domestic debt with external debts remaining high has given cause for concern on two main counts.

- First, in the absence of a corresponding improvement in the primary fiscal surplus (i.e., the difference between government revenue and noninterest expenditure), and with no new external funds available, growing fiscal deficits led to further domestic debt accumulation.
- Second, the worsening fiscal and domestic debt pictures were accompanied by a sharp increase in the rate of inflation, with some countries experiencing annual rates averaging over 200 percent and many sustaining increasingly negative and volatile real interest rates. This volatility exacerbated the uncertainty surrounding the inflation picture, further harming saving, investment, and growth.

Fiscal policy and public debt

In light of all these interconnections, developments related to external and domestic debt should not be viewed separately from each other or from the underlying fiscal situation, as is often done in medium-term projections. Policymakers must have a way of tracking not only the current evolution of government revenues and expenditures but also the expected values of future magnitudes. What is called for is a "forward-looking" balance sheet of the entire public sector. This would give a measure of the solvency of the public sector, as well as the fiscal adjustment required to fully service the outstanding public debt—thus playing a helpful role in designing and evaluating adjustment programs.

In a simplified balance sheet, government assets would include the current stock of domestic plus foreign assets (the conventional definition), and the estimated present value of anticipated future revenues from tax and nontax sources. Government liabilities would include the current outstanding stock of debt and other current obligations (the conventional definition), and the present value of future expenditures, including subsidies. The difference between the two would be the government's net worth. Thus, if total assets exceeded total liabilities, net worth would be positive, meaning the government would be solvent (i.e., could meet its current and future obligations). But if net worth were negative, the government would be insolvent and, without an increase in its assets, would not be able to fully service its outstanding debt.

This approach is similar to that used to evaluate the solvency of a private firm. However, two key differences should be kept in mind. First, in the private sector, given the relatively limited activities in which a firm is engaged, it is usually possible to estimate with reasonable accuracy the present value—that is, the value in terms of today's dollars—of major future flows of expenditures and revenues. By contrast, in the public sector, given the broad mandate, it may be hard to obtain good estimates of the present value of the expected future stream of revenues and expenditures.

Second, this definition of solvency appears to be somewhat simplistic for governments, because not all assets (e.g., government buildings and embassies) can be used to service liabilities. For our balance sheet, therefore, we will focus only on the assets most likely to be available—foreign exchange reserves and government revenues from taxes and other sources (privatization is turning out to be a major source of extraordinary revenue for many countries, but for the sake of simplicity, it is not included here).

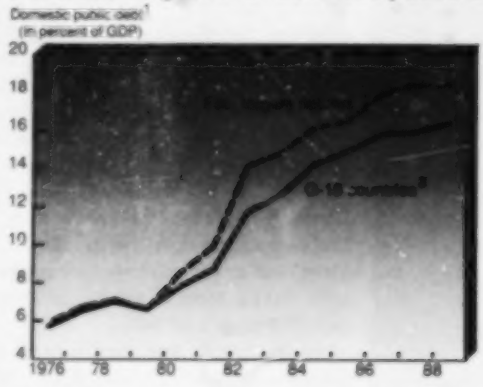
So constructed, the balance sheet approach highlights several aspects of the fiscal situation:

- For a given net worth to be maintained, any increase in debt has to be matched by (1) an increase in government revenues or current assets and/or (2) a decrease in expenditures.
- Domestic and external debt appear to enter the balance sheet on an equal footing—that is, both types of debt have an equal claim on government resources.
- The present value of the anticipated future stream of government expenditure and subsidies, to the extent that the stream is perceived as a "permanent" obligation, is also a form of government debt. Similarly, the stream of future taxes can be seen as a form of government asset. For this reason, "solving" the debt problem may involve a cut in subsidies or an increase in tax revenues.

Government net worth. How would this balance sheet work? The table presents four cases, which although hypothetical, illustrate situations that are not atypical of several of the G-15 countries. They enable us to calculate a country's net worth, or solvency.

The first step is to estimate the primary fiscal balance expected to prevail in the future—in Cases A and B, we have surpluses,

A troublesome growth of domestic public debt



Sources: National sources; various issues of the IMF's *International Financial Statistics* and *Government Finance Statistics Yearbook*, and various unpublished IMF documents.

[1]Domestic public debt includes gross liabilities of the consolidated public sector and of the monetary authorities with the private sector. Weights are based on the relative shares in US dollar GDP in 1981–82 of the G-15 countries and of the four largest debtors among them (all of which are in the Western Hemisphere), respectively.

[2]Among the G-15, the four developing countries with the largest external debts are: Argentina, Brazil, Mexico, and Venezuela.

[3]The G-15 countries include: Argentina, Bolivia, Brazil, Chile, Colombia, Côte d'Ivoire, Ecuador, Mexico, Morocco, Nigeria, Peru, the Philippines, Uruguay, Venezuela, and Yugoslavia.

For a more detailed discussion, see "Domestic Public Debt of Externally Indebted Countries," by the authors, IMF Occasional Paper No. 80, June 1991, $10 ($7.50 for academic orders) available from IMF Publication Services, Washington, DC 20431, USA.

and in C and D, deficits. These figures are then discounted to the present—using an illustrative discount rate of 5 percent a year (this would be consistent with a growth rate of, say, 3 percent and a real interest rate of 8 percent). In Case A, the present value of a primary surplus of 1.5 percent of GDP is equivalent to a current asset of 30 percent of GDP, whereas in Case D, a primary deficit of 2.5 percent of GDP is equivalent to a debt of 50 percent of GDP. Finally, the present value must be added to the ratios of foreign exchange reserves to GDP to obtain total gross assets and subtracted from the total (domestic plus external) public debt to GDP ratio to obtain the net worth of the government.

What we end up with is only one solvent government, Case A, meaning that its expected primary surplus would be adequate to meet its outstanding government liabilities. In the other three cases, government net worth is negative, reflecting the impact of a high level of public debt and/or a high primary fiscal deficit. It is interesting to note that Case D, while having the lowest public debt to GDP ratio (similar to Case A), shows a significantly negative net worth (similar to Case C), because of inadequate fiscal adjustment. Case B shows how a country with a primary surplus and positive foreign exchange reserves can still have a negative net worth, because of a large public debt load.

Is the government solvent?
(In percent of GDP)

Case	Primary surplus or deficit (-) (1)	Present discounted value of primary balance (r=0.05) 1/ (2)	Foreign exchange reserves (3)	Total public debt (4)	Net worth 2/ (5)	Required fiscal surplus 3/ (r=0.05) (6)	Required fiscal surplus (r=.03) (7)
A	1.5	30	10	40	0	1.5	0.9
B	1.0	20	5	80	-55	3.8	2.3
C	-1.5	-30	5	80	-105	3.8	2.3
D	-2.5	-50	5	30	-75	1.3	0.8

1/ r = discount rate.
2/ Net worth (5)=(2)+(3)-(4).
3/ Required fiscal surplus shows the primary surplus required to establish solvency. In Case A, it is the same as the projected surplus (when the discount rate is 5 percent); in the other cases, it exceeds the projected surplus substantially.

Required adjustment. But if government net worth is negative, how much of a primary fiscal adjustment (as a percent of GDP) would be needed to re-establish solvency? Or to put it another way, how much of a permanent primary surplus would be required to service the current levels of public debt, thereby preventing government net worth from being negative? The last two columns in the table give the answers for these four cases.

Using the 5 percent discount rate, we see that the primary surplus needed is quite sizable, especially in Cases B and C—where it exceeds 3 percent of GDP. Moreover, with the exception of Case A, substantial permanent fiscal adjustments are being called for, compared with current expected performance. And while some of these numbers may appear manageable, they represent a significant adjustment given that the improvement has to be maintained into the future. But if the growth rate was higher—say, 5 percent instead of 3 percent—and real interest rates remained at 8 percent, giving a discount rate of 3 percent, the required fiscal surpluses could fall markedly. But even then, substantial permanent fiscal adjustment would be in order.

Domestic public debt management

The above numbers show that fiscal adjustment is critical for countries facing a domestic debt crisis. But there are other steps policymakers can take to enhance the chances of success of their stabilization programs—notably, better management of domestic public debt. This holds particularly true for the G-15, which have had to contend with sharp increases in inflation over the past decade.

Nominal debt and indexation. In most countries, domestic public debt is issued in nominal terms—that is, it is denominated in domestic currency and not indexed to reflect changes in the general price level. But since its real value is affected by changes in the price level, the presence of nominal debt itself has several implications for macroeconomic policymaking in general, and the fiscal picture in particular.

Perhaps the most important implication is the potential to tolerate or encourage inflation, because, at least superficially, rising prices hold the promise of reducing the debt burden in real terms. But such a reduction can occur only if the increase takes the public by surprise. For if inflation was anticipated, government bond holders would require a sufficient return to compensate for the expected loss due to a fall in the real value of the bonds, meaning nominal interest rates would have to rise. If policymakers believe that inflation may be unanticipated, however, they may be tempted to tolerate the adverse effects of inflation. For this reason, a large stock of nominal public debt may be destabilizing, especially when the government is having trouble enforcing a credible stabilization program. The higher rates will boost the government's issuing and servicing costs, thereby increasing the debt burden even further. This, in turn, will make inflation appear even more "attractive" to the policymaker.

One possible way of eliminating, or reducing, the temptation for inflation, would be to index the debt—that is, tie the domestic currency value of the principal to, for example, the consumer price index, the exchange rate, or both. This would serve to maintain the real value of the principal, in effect breaking the link between inflation and government debt. Expectations of inflation would be lowered, and the government would be forced to make a policy pre-commitment (namely, the indexation formula itself). But debt indexation should be used with caution, because (1) any device that promises to moderate the adverse consequences of inflation is likely to weaken the resolve to reduce it, and (2) debt indexation may be ineffective, or even counterproductive, if fiscal adjustment is inadequate.

As for how debt indexation fared in the G-15 countries from 1982–88, the verdict is unclear. It appears, however, that in three of the countries (Brazil, Chile, and Uruguay), most (on average more than 75 percent) of the domestic public debt was indexed, and in four countries (Argentina, Colombia, Mexico, and Morocco), very little (less than 25 percent) was indexed. Among those with high indexation, Brazil experienced extremely high rates of inflation, largely as a result of inadequate fiscal adjustment, whereas Chile and Uruguay had substantially lower average rates of inflation, with no hyperinflationary experiences. Among those with low indexation, Mexico and Argentina sustained high inflation episodes, while a number of other countries showed substantially lower average inflation rates.

Maturity structure. Another possible tool in debt management is adjusting the maturity structure—that is, the period over which the outstanding stock of debt will be redeemed by the government. The average maturity matters because it can play a crucial role in preventing "confidence crises." This is because longer maturities reduce the need to refinance on a frequent basis. For the G-15, the

proportion of short-term debt (with a maturity of less than one year) to total debt for 1983–88 tended to be very high in countries such as Brazil, Mexico, and Argentina, and to a significantly lesser extent in Chile and Uruguay. Adjusting the average maturity also holds the potential—if used in conjunction with indexation—to help stabilize inflation.

To understand how this would work, it is important to first consider the relationship between inflation and debt maturity; in particular, how the real value of debt (nominal debt adjusted by the price level) would decline with an increase in the inflation rate. In general terms, by lengthening the average debt maturity, that is, increasing the time period after which the debt stock will be redeemed, governments can reduce dramatically the yearly rate of inflation needed to decrease the real value of debt by a given amount.

For example, compare two countries, both with a nominal debt equivalent to 25 percent of GDP. In the first country, all the debt matures in one year, while in the second country, the debt matures in 30 years. Reducing the real value of debt by the same amount in the two countries would require an inflation rate of over 20 percent in the first case, but only around 1 percent a year in the second case. This is because with longer maturities, very low rates of inflation have a cumulative effect that is as significant as high rates of inflation over a very short period.

What this means for policymakers is that maturity structures can be lengthened or shortened to help control expectations about inflation. But the decision on the maturity structure should be linked to whether the country also chooses to index the debt, as both actions affect the impact of inflation on the real value of debt.

If debt indexation is used, longer maturities would be called for. This is because under indexation, inflation has no effect on reducing the real value of debt. Thus, a long maturity would mean that over a long period of time there would be no temptation for the government to tolerate inflation just to reduce the real value of debt. If debt indexation is not used, however, shorter maturities would be in order; in fact, longer maturities may even exacerbate expectations of high inflation. This is because with a longer maturity, inflation would appear more attractive, as the government might rationalize that it was only a little amount each year for many years. By having a shorter maturity, the government would put itself in the position of needing a sharp burst of inflation to achieve a given reduction in real debt. This would naturally increase the cost associated with any given debt reduction, making the inflationary route less acceptable. ■

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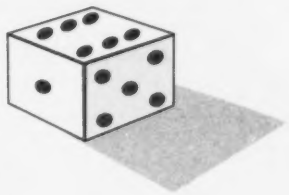
How Can Developing Countries Hedge Their Bets?

By using market-based risk management techniques, developing countries can protect themselves from external volatility

Stijn Claessens



For the past two decades, developing countries have been contending with highly volatile international prices—exchange rates, interest rates, and commodity prices. For developing countries, especially those that had borrowed heavily in world capital markets, this has meant greater uncertainty and, in many cases, unfavorable price movements have contributed to the rapid buildup of debt. Traditional methods for coping with external exposures to price risks, such as general borrowing, contingent finance, domestic and international commodity price stabilization schemes, and export diversification have proven to be limited. Hence, new arrangements and creative strategies for managing risk have been sought.

In light of the positive experience of many corporations in industrial countries, central banks, and major companies throughout the developing world have begun to experiment with various risk management instruments. These techniques, most notably futures, options, and swaps, are designed to transfer and reallocate some of the associated external risks. More specifically, risk management involves the structuring of financial arrangements to produce gains (or losses) that offset or counterbalance, at least in part, the losses (or gains) arising from price volatility.

Glossary of financial instruments

Futures/Forwards. Agreements to purchase or sell a given asset at a future date at a preset price. Futures transactions are traded in formal exchanges through clearinghouse systems; forwards are offered (usually by banks) on an over-the-counter basis. Futures and forwards contracts differ in their handling of credit risk: Futures involve collateral with (daily) adjustments to reduce credit risk, while forwards involve no collateral.

Options. Contracts that give its owner the right to buy (if it is a call option) or sell (if it is a put option) a fixed quantity of a currency or a commodity, or establish an interest rate at a fixed price before or at a designated future date. Options provide price insurance by guaranteeing a minimum price received (for commodity exports by buying put options) or a maximum price paid (for currencies by buying call options).

Swaps. An agreement to exchange specified cash flows at fixed intervals. Swaps involve a series of forward contracts, extending to long-dated maturities. Both parties to the contract incur credit risk because, depending on the prevailing market price being above or below the predetermined price, one party owes or is due the net amount.

Commodity-linked loans. A loan in which interest and/or repayment amount are linked to the market price of a certain commodity.

This article describes the various available financial instruments, with a focus on how some developing countries are using them. It must be noted, however, that although risk management instruments hold considerable promise, their use remains limited and, often, at an experimental stage.

Financial tools are attractive . . .

Risk management provides insurance against adverse fluctuations in external prices without either requiring substantial resources (e.g., subsidies, reserves, or financing), or introducing price distortions. It transfers the risks associated with price volatility to international financial markets at terms that are attractive to developing countries. Although risk management means giving up the chance of unexpected gains as well as the risk of loss, developing countries are typically not well equipped to profit from speculation, which is best left to international markets.

Risk management instruments have evolved over the past decade in breadth and sophistication. Essentially, they include both short-dated (roughly 1-year maturity) and long-dated (up to 20-years maturity) instruments (see glossary).

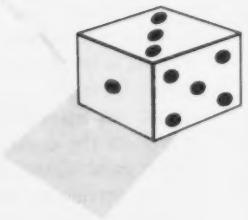
Short-dated instruments. Some developing countries are discovering how comforting short-dated instruments, such as futures and options, can be. Typically, transaction costs (brokerage fees, bid/ask spreads, and the costs of providing margin) amount to no more than a fraction of 1 percent of the contract value (about one eighth to one half of 1 percent); and risk premia—the return that hedgers have to pay to other agents for bearing the risk of price movements over the life of the contract—are generally low. Chile hedged part of its floating interest rate debt in 1989 and 1990, and Mexico hedged a signifi-

Mexico's oil-hedging strategy

In late 1990 and during the first half of 1991, Mexico used financial risk management tools to protect its crude oil export earnings (which average about 1.3 million barrels a day) against a price fall. Mexico bought put options at different strike prices (i.e., the price at which the option-holder can sell), engaged in selling of oil futures, and used short-dated (up to one year maturity) oil swaps to hedge its oil price risk. Mexico's overall strategy was to ensure that it received at least $17 a barrel, the price used as the basis for its 1991 budget. By using these contracts, Mexico effectively ensured a minimum price for its chief export over the near term. As oil prices fell sharply following the end of the recent Middle East crisis, it is likely that, compared with going unprotected, Mexico achieved a higher price by engaging in risk management. Mexico also used this period of higher prices to establish a special contingency fund to protect against a medium-term decline in oil prices. As explained by the finance ministry, participation in the futures markets served to reassure investors that regardless of oil price movements, the country's economic program and the budget would be maintained.

Chile's hedging operations with Eurodollars

To manage the risk of its variable interest rate debt with commercial banks in 1988, Chile's central bank carried out short-term hedging operations with Eurodollar futures contracts. As of December 1987, about 83 percent of Chile's total $18 billion medium- and long-term debt consisted of variable-rate loans, mostly tied to the six-month LIBOR. After the October 1987 stock market crash, interest rate developments were particularly uncertain. To reduce this risk, Chile hedged about $1.5 billion of debt against interest rates. In March and June 1983, Chile sold 3-month Eurodollar futures contracts. The sale of futures contracts was spread over more than three weeks and the effective LIBOR achieved was 7.3 percent. The LIBOR would have been as high as 7.8 percent without the hedge. The central bank is said to have carried out similar hedging operations in 1990.



cant part of its oil export earnings in late 1990 and the first half of 1991 (see boxes above). In some cases, risk management in the short-dated forwards markets has been routinely undertaken for many years. For instance, Ghana and Côte d'Ivoire have consistently sold forward a large portion of their subsequent year's cocoa crop at a fixed price. Simulations have shown that by using futures, 80–90 percent of price risk can be eliminated for most commodities.

Long-dated instruments. The search for long-term and more comprehensive risk management techniques has produced long-dated instruments, including currency, interest, and commodity swaps; long-dated options; and commodity-linked bonds. These nonstandard, tailor-made instruments trade in the "over-the-counter" markets provided by commercial banks and other financial institutions. These instruments are essentially composed of two building blocks—swap and option features—that can be combined with loans and bonds in a variety of ways.

Currency and interest swaps. Currency and interest rate swaps are typically used in two ways. One is to hedge an existing risk by contracting a swap in such a way that the timing of cash flows in a swap matches the payment dates on an existing asset or liability (see accompanying box). A second is to obtain a desirable liability structure by contracting new debt and a swap at the same time, yielding a loan that is effectively denominated in another currency or with another interest rate. This flexibility makes it possible for participants to take advantage of favorable borrowing opportunities in certain markets without incurring undesired currency or interest rate risk.

Thailand has used swaps in both of these strategies. For instance, the ministry of finance in Thailand has arranged with US money center banks and Japanese banks to exchange floating for fixed interest payments (or fixed for floating interest payments). In March 1988, finance ministry officials invited several US commercial banks to bid for two (seven-year) US dollar fixed/floating interest swaps of about $70 million. Although Thailand does not disclose the details of its swap transactions, the country is known in the international financial community for this type of transaction.

Commodity-linked instruments. The long-dated commodity-linked instruments market developed in the late 1980s. These instruments are now being used on a regular basis in the mineral and energy sectors in industrial countries. Investments in gold mining in developed and developing countries are often financed with loans denominated in ounces of gold. Exporters in developing countries, most notably in Chile, Ghana, Mexico, and Papua New Guinea have often combined trade finance with commodity swaps. By locking in their export receipts at a fixed price through a one- to two-year commodity swap, exporters have achieved a better match between export receipts and debt service obligations, allowing them to secure more favorable terms on their trade finance. An example of a copper swap associated with new financing is the Mexicana de Cobre transaction described in the box.

Dual currency loans. Another use of long-dated risk management instruments is dual currency loans. The Central Bank of Turkey frequently uses DM-US dollar dual currency loans, since Turkey can expect ample revenue in deutsche marks from workers' remittances from Germany. Turkey agreed to a $100 million dual-currency syndicated loan in March 1988. The loan included the sale by Turkey of a DM option on the principal. The premium from the sale of the DM option was used to reduce the cost of funding. As a result, the loan carried a floating interest rate of 0.015 percent over the London Interbank Offered Rate (LIBOR). If it had been a conventional loan, the central bank would have paid about 1.25 percent over LIBOR.

Indonesia used a type of dual currency loan in which the borrower chooses the currency in which the funds are disbursed. In October 1988, Indonesia contracted a 40 billion yen revolving credit facility for three years. In this facility, Indonesia could draw up to 40 billion

How do currency swaps work?

Suppose a country has access to yen financing but would not like to increase the amount of its yen obligations. Assume that the borrower has secured a loan for ¥10 billion, on which the interest rate is 5 percent, resulting in annual interest payments of ¥500 million. The country could now arrange a swap with its bank in which it essentially acquires a yen asset in exchange for accepting a dollar liability. The original yen loan will be retained. The yen asset will pay exactly the interest due on the original yen loan, ¥500 million, and as a result, the country will have offsetting yen assets and liabilities. The net result is to create a "synthetic" dollar borrowing. If the exchange rate is ¥125 per dollar and the dollar interest rate is 10 percent, annual interest obligations on the newly accepted dollar obligation would be $8 million. This swap requires, of course, a partner that prefers a yen-denominated liability to a dollar-denominated liability.

Mexicana de Cobre financing using a copper swap

Mexicana de Cobre (MdC), a copper mining subsidiary of Grupo Mexico, obtained some innovative financing in 1989. In addition to a conventional loan of $210 million syndicated for MdC, a copper swap was arranged with the same maturity and payment dates as the loan to hedge MdC's export earnings to a European purchaser. As a result of the swap, MdC was able to assure creditors it had sufficient funds to service and repay the loan, regardless of fluctuations in the price of copper over the loan life. As copper prices have declined since 1989, MdC most likely benefited from having locked in a fixed price. Further security was provided by an "offshore" escrow account (i.e., located outside of Mexico), into which the European purchaser of copper deposited payments according to its purchase contract with MdC. The first charges on the escrow account were the net payments under the debt service on the loan and the swap, ahead of any remittances to MdC. The elimination of the copper price risks through the swap and the security afforded by the escrow account were the basis of financing at an interest rate favorable to MdC. Effectively, MdC shifted financing costs from periods of low copper prices to periods of high copper prices and thus increased its creditworthiness.

yen or its dollar equivalent for three years. Once the loan was disbursed, it became a conventional (yen or dollar) loan, with an 8-year maturity and a 5-year grace period, with a floating interest rate of 0.5 percent over LIBOR for the first three years and 0.625 percent over LIBOR thereafter. The fee required at the time of entering the loan contract was 0.5 percent of the principal. This arrangement allowed Indonesia to manage its debt by giving it the right to choose the currency denomination of the debt over three years.

. . . but some factors limit their use

Despite advances in new and flexible instruments, developing countries face barriers—some formidable—to embracing these techniques. These include:

• ***High up-front premiums.*** The use of some financial techniques, such as buying options, can require high premiums to be paid up front. This may be difficult for countries that have limited access to foreign exchange.

• ***Low credit standing.*** For many developing countries, access to some risk management instruments is limited by creditworthiness considerations. This is particularly the case with long-dated instruments where the longer the length of the contract, the larger the potential range of price movements and the higher the credit risk. Credit risk is less of a barrier in the case of short-dated instruments where margin requirements at the outset of the contract minimize the credit risk.

• ***Strict domestic rules.*** Domestic legal and regulatory barriers affect, in particular, the private sector's capacity to hedge abroad. Exchange controls, for example, may prevent the purchase of collateral for engaging in the futures market or laws may prohibit domestic access to such instruments.

• ***Weak incentives.*** Often, several parties in developing countries incur external price risks in a complex and not so transparent manner, with the result that no single party has the incentive to engage in risk management. In Costa Rica, for instance, coffee price risk is incurred by exporters, intermediaries, and final producers. The producer, who is least able to engage in risk management, incurs most of the risk, while the exporter, who is most able to engage in risk management, has the least incentive to do so. Appropriate changes, including measures to assure a liberalized domestic financial and marketing system, could expand use of these risk management instruments (by the private sector).

• ***Limited expertise.*** Risk management is a complex operation requiring the knowledge of market instruments and their strategic use. Too often, developing countries lack technical and management expertise, as well as the institutional framework within which to carry out these operations. While it is clear that improved external risk management can assist developing countries in their economic management, it is important to realize that risk management can only be performed effectively when certain key conditions are fulfilled. These financial techniques, when used inappropriately, can be very costly. Therefore, it is important to introduce an institutional framework that ensures adequate reporting, recording, monitoring, and evaluating mechanisms, and to establish internal control procedures that avoid and protect against speculative transactions.

Still, they hold promise

Developing countries' exposures to external price risks are large and the impact of adverse shocks can be severe. In such circumstances, obtaining some degree of insurance against price volatility through the use of market-based risk management tools can make an important contribution to a country's adjustment effort. Although developing countries have been severely constrained in their use of these techniques—particularly long-dated instruments—they have started to make use of risk management opportunities in financial markets. Removing domestic, legal, and institutional barriers on access to international markets is the first step in furthering the use of these instruments. ■

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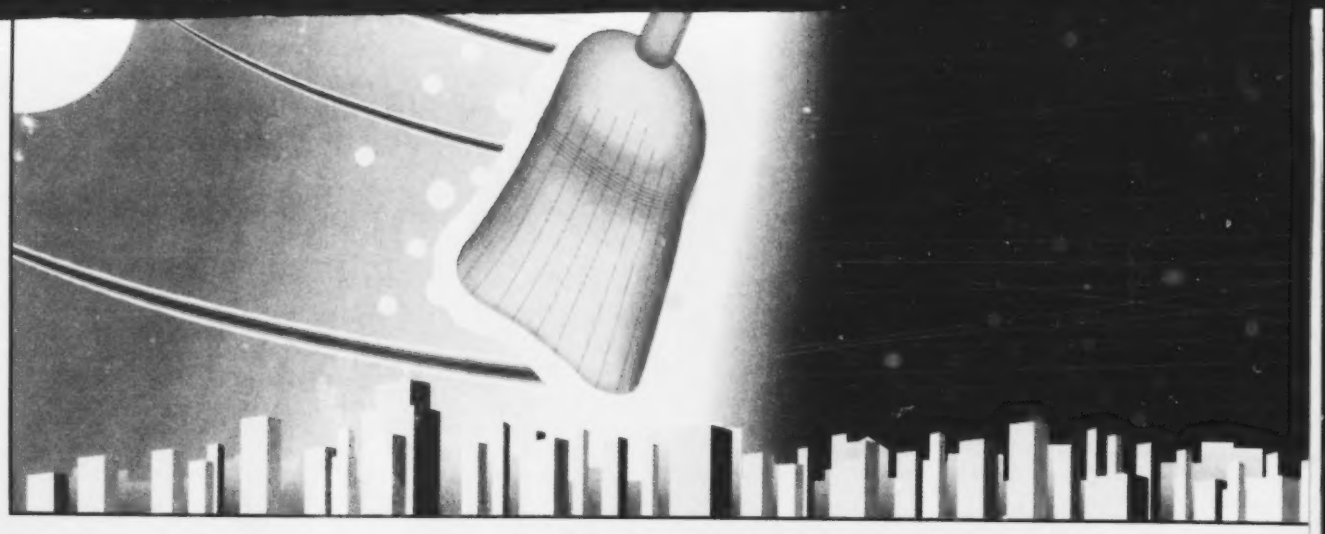


Cleaning Up Eastern Europe

Contrary to doom and gloom scenarios, environmental conditions can be greatly improved with sensible policies and modest investments

Gordon Hughes

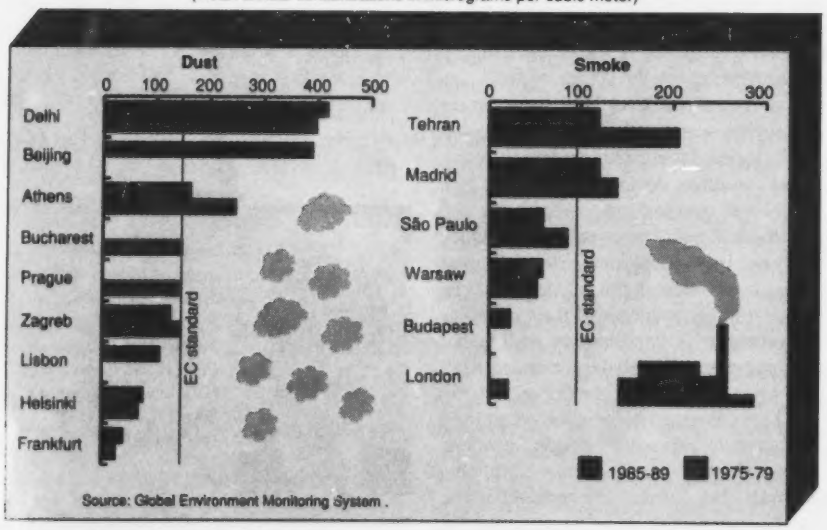
Our image of Eastern Europe these days has been greatly influenced by graphic reports of the environmental damage caused by big heavy industrial plants. Stories of steel mills, chemical plants, and power stations—especially in the so-called "Black Triangle" covering Saxony, Upper Silesia, and northern Bohemia—belching fumes into the air, or noxious chemicals into rivers, sound reminiscent of England's "dark satanic mills" of the late 1800s. Gone unnoticed in the rush to conclude that the entire region is an ecological disaster zone is the fact that there are large areas of relatively untouched forest, lakes, and wetlands.

This erroneous picture of Eastern Europe matters because problems that seem overwhelming tend to lead to inertia. Indeed, some observers—noting the grave economic problems that these countries must face as they undertake stabilization programs and market-oriented reforms—dismiss cleaning up the region as a luxury that cannot be afforded. Others argue that tackling the environment is a priority, and that vast sums of foreign assistance will be needed. Neither side is right. Both fail to identify a set of environmental priorities that can be addressed at reasonable cost through sensible policy reforms and modest investments.

Chart 1

East or West, poor cities have the worst air quality

(Mean annual concentrations in micrograms per cubic meter)



To map the way forward, four questions must be answered: (1) How bad are environmental conditions relative to countries with similar incomes and industrial bases? (2) How much will the transition to market structures help? (3) What environmental policies should be adopted? and (4) What are the key investments required? Only then can we begin to develop an agenda for action.

An ecological disaster?

When assessing environmental problems, the most commonly used benchmark is damage to human health. On this score, air quality ranks as Eastern Europe's most acute problem, in large part because of the difficulty of avoiding exposure. Metal dusts—especially lead—and suspended particulate material (dust and smoke) are the main culprits, damaging the development of children and giving rise to excess mortality and ill health from

respiratory diseases (bronchitis, emphysema, and asthma). Exposure to high concentrations of sulfur dioxide exacerbates the effects of particulates and, along with nitrogen oxides, can cause difficulties of its own. Water pollution is also a serious cause for concern, though simple measures can remedy the problem or limit exposure. For example, bottled water supplies reduce the threat to the health of newborn babies in those rural areas where high nitrate levels are found in groundwater used for drinking. Still, the careless disposal of toxic or nuclear wastes in some localities threatens the quality of surface and groundwater sources on which many people rely.

From an economic standpoint, there are other costs, too. The need to spend money on maintaining or replacing physical assets (buildings, pipes, roads, and bridges) that have been damaged by dirt or acidity in the air, or by saline water is certainly the biggest of these costs. There are also losses from diminished productivity of farms and forests. Nonetheless, the sums involved are small relative to the estimated costs of poor air quality to human health.

But are Eastern Europe's problems really any worse than those in other parts of the world? A worldwide network of monitoring stations in large cities provides comparable data on air quality that lead to some surprising conclusions. It is true that the levels of dust and smoke and sulfur dioxide in some towns and cities (Teplice in Czechoslovakia, Katowice in Poland, and Magnitogorsk in Russia) are deplorable, especially in the winter. However, many urban areas in China, India, and Latin America experience levels that are similar or far worse. Even more relevant, as Chart 1 shows, the average exposures to air pollutants in the main towns and cities are no worse, and in some cases better, than west European cities with similar income levels and industrial structures (Athens, Madrid, and Milan). Moreover, most large cities in Eastern Europe meet the European Community (EC) standards for both average and extreme (98th percentile) exposures to particulates. And although many east European cities experience extreme exposures to sulfur dioxide in excess of the EC standard, the same is true in Western Europe. Thus, the air quality problem is largely one of local concentrations of pollution associated with specific industries. Hardest hit are urban areas with a concentration of heavy industrial plants, and those where coal is the predominant fuel. For major cities, intermittent peaks in exposure levels are the primary concern. The combination of high levels of particulates, sulfur dioxide, and water vapor over several days (the classic London smogs of the past), poses the greatest danger to individuals with respiratory or heart conditions.

As for water, the picture appears to be much the same, although the data are limited and hard to interpret. Certainly, levels of heavy metals in soils and river sludge are alarmingly high around metallurgical plants throughout the region. Major rivers in Poland and Ukraine are also badly polluted with saline wastewater from coal mines. But the Rhine is probably Europe's dirtiest large river, while the Mersey, the Po, and even the Thames are as, or more, polluted than equivalent rivers in Eastern Europe on many indicators of water quality.

So how can we reconcile the generally moderate levels of air and water pollution with the widespread perception that there are gross violations of environmental standards throughout Eastern Europe? The answer may well be that the region's standards have been absurdly tough compared to those of the EC and the United States. For example, several countries have set maximum exposures over 24 hours for air pollutants similar to the annual average exposures implied by EC standards.

What is more, the region's pollution problems are no worse than those of Western Europe and North America some 20–30 years ago. Memories are short, but environmental conditions in the coal and steel communities of the eastern United States, Japan, the Ruhr, and south Wales were little different from those in similar east European communities today. In effect, the region is caught in an economic and industrial time warp, with all of the characteristics of the rich countries in the 1950s and early 1960s.

High coal use. Few west European households now rely upon coal as a domestic fuel, but its use is still widespread further east (see Chart 2). This is critical because the burning of coal by households and in small boilers has always been the primary cause of smogs and of the most damaging exposures to particulates and sulfur dioxide.

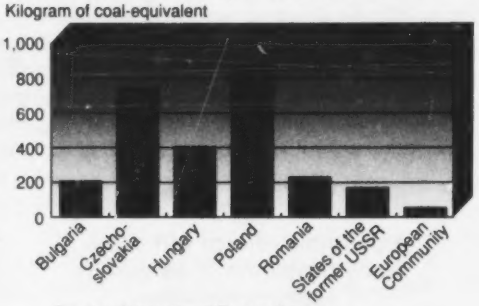
Old technology. Emissions of dust containing heavy metals from the metallurgy industry is the other major cause of concern. Most steel mills in the region rely upon old open-hearth furnaces that emit much more air pollution per unit of output than the basic oxygen or electric arc furnaces standard in rich countries. The region's nonferrous metal smelters, especially for lead and aluminum, have primitive arrangements for filtering metal dusts from the exhaust gases coming from their furnaces, compared with the options provided by modern technology.

Low energy prices. Aggravating matters have been the low energy prices charged in most east European countries, relative to those in Western Europe from 1980–90, even when converted at heavily overvalued exchange rates (see Chart 3). The same has been true for most natural resources, so that there

Chart 2

Small-scale consumers still use coal in Eastern Europe

(Average consumption per person in 1988)



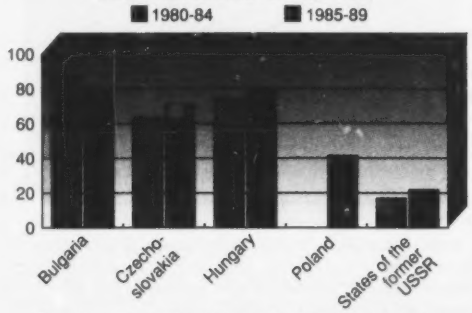
Source: International Energy Agency.

Chart 3

Not even close to west European levels

Energy prices

(Index, west European average=100)



Sources: International Energy Agency and national authorities.

Note: Prices in local currencies have been converted to DM using the official commercial exchange rates.

Parts of this article are based on material presented in "Are the Costs of Cleaning Up Eastern Europe Exaggerated? Economic Reform and the Environment," by the author, Oxford Review of Economic Policy, Vol. 7, No 4, 1991.

was little incentive to save energy and raw materials. As a result, these countries rank as the most profligate users of energy per dollar of GDP in the world, with energy intensities five or more times those in comparable west European countries.

Transition to markets

Before drafting an agenda for action, it is reasonable to wonder how much the economic transformation already underway in the region will help clean up the environment. Because a large fraction of emissions come from a small number of industrial sectors—notably electricity generation, metallurgy, and building materials for air pollutants; and paper and pulp, textiles, and food processing for organic effluent discharged into waterways—changes in the overall level and composition of industrial production should have an important bearing on pollution levels. But the outcome need not be entirely beneficial in the short or medium term.

New investments embodying modern technologies will lead to a fall in the amount of pollution per unit of output. However, industrial restructuring will not lead to the rapid closure of all the heavy industrial plants that disfigure the environment. Although these industries are inefficient by western standards, what matters is how they compare with other industries within the same country. Those that are performing relatively well (e.g., metallurgy in Czechoslovakia) should not be expected to contract rapidly, so that the fall in total emissions may be less than the decline in total industrial output.

Market-oriented reforms will also help by establishing proper incentives to use energy and other natural resources much more efficiently, even without new investments prompted by industrial restructuring. In the past two years, most east European countries have substantially raised real energy prices as a key part of their reform programs. As enterprises respond to past and future increases, the energy intensity of economic activity may well fall by at least one half by the end of the decade. Higher energy prices will also bring about a shift in the composition of fuel use. As coal prices rise relative to other forms of energy, the long-standing tradition of encouraging domestic coal consumption to lower dependence upon imported supplies of oil and gas will be broken.

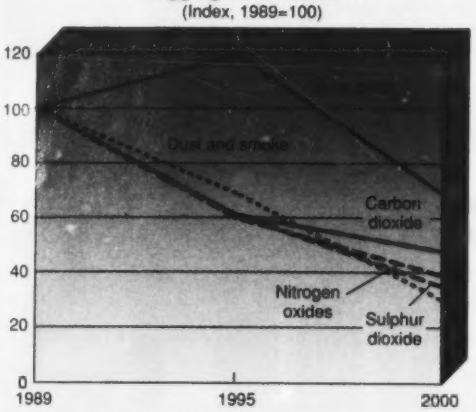
But how far will sensible economic policies improve the environment? To answer that question, a model for energy demand and environmental emissions up to the year 2000 was constructed for Bulgaria, Czechoslovakia, Hungary, Poland, and the states of the former USSR. It assumes that (1) energy prices will move up to west European levels by end-1993 (e.g., Poland's industrial sector will face real increases of between 47 percent for gas and 425 percent for coal); (2) energy users will respond to higher prices over several years; (3) industrial sectors will be restructured in line with comparative efficiency; and (4) new investments will gradually reduce emissions per unit of output to current west European levels over the period 1995–2010.

Chart 4

Economic reform will solve many problems of air quality

Aggregate emissions

(Index, 1989=100)



Note: The projections take account of energy conservation induced by higher prices, changes in GDP, shifts in the composition of industrial output, and, post 1995, new investment in less-polluting technologies.

The results show that the response to these policy changes should reduce aggregate emissions of energy-related air pollutants by 60 percent or more by the beginning of the next century (see Chart 4). Up to 1995, a significant portion of that drop would come from the decline in economic activity—as has already been observed in Poland and Hungary. But after that, when it is assumed that total output will rise, the continuing decline reflects the combined effects of higher energy prices and new investment in less-polluting technologies. The path is not as smooth for metal dusts. In their case, industrial restructuring would initially increase the level of total emissions. Later in the decade, as better technology is introduced, emissions should fall rapidly, even with an increase in output.

For most forms of water pollution, the basic story line is similar, although the results are much less encouraging. Raising pesticide and fertilizer prices to world levels, together with the breakup and privatization of state farms, should reduce application rates and the run-off of chemical residues into rivers and groundwater sources. However, total discharges of organic wastes, chemicals, and other water pollutants from industry may not be much affected by the process of industrial restructuring. The main source of water pollution—municipal wastewater—can be dealt with only by major investments to rehabilitate existing, or build new, sewage treatment facilities.

Better environmental policies

The gains from introducing sensible economic policies should be reinforced by good environmental policies. In the past, local and national governments always gave priority to reaching production targets. As more power is given to environmental agencies at a local level and as governments disengage from direct involvement in the ownership and management of industry, it should be possible to establish a more effective system of environmental regulation. But with falling output and rising unemployment, the authorities may be understandably reluctant to enforce strict rules if that means closing down plants.

A clear set of priorities and targets that can be realistically achieved over the next five years must be established. Policymakers should, in particular, build upon one good feature of the existing regulations—systems of emission fees and fines imposed on polluters. The problem with these charges has been that they were set too low, not systematically adjusted in line with inflation, and either not enforced or simply regarded as a cost to be passed on to consumers. But if they were raised dramatically (maybe by as much as 50 times) and enforced, the charges would provide a powerful incentive for enterprises to find low-cost methods of abating emissions, even if large investments in new plant and technology were not affordable. In this way, the ingenuity and skills of plant managers could be mobilized to achieve better environmental performance, while avoiding the danger of enforcing outdated or costly technology standards.

One word of caution, however. Pollution charges should be reserved for dealing with emissions from large- or medium-sized industrial plants that can be monitored at reasonable cost. This includes air pollutants such as dust, sulfur dioxide, nitrogen oxides, and even carbon dioxide, and water pollutants such as organic material, suspended solids, and some heavy metals. Toxic chemicals, other heavy metals, and trace pollutants cannot be regu-

metals, and trace pollutants cannot be regulated by this approach. When monitoring emissions is too expensive, blunter forms of regulation (e.g., technology standards) may be appropriate.

Poland has raised the level of its pollution charges by about ten times in real terms since 1990. These charges, which go into a National Environment Fund to finance various environmental investments, now provide a genuine incentive to reduce emissions. As a result of the fall in output and the higher pollution charges, the situation in Katowice, for example—where steel mills, nonferrous metal smelters, chemical plants, power stations, and a wide range of other industrial plants caused extreme levels of exposure to pollutants—has changed radically. Air quality has improved significantly, and enterprises are considering, or investing in, environmental controls.

While the changes in Poland are a major step forward, weaknesses remain. An example is the charge for saline water emissions, which is too low to force the mines concerned to control their discharges. The government is worried—and understandably so—that higher charges would cause the mines to shut down, with a loss of jobs and greater dependence upon imported energy. However, the costs of the damage caused by saline water are equally real, even though they may not be immediately apparent.

Role of public investment

Given that better economic and environmental policies will take care of a large part of the emissions causing the most serious health and economic damage, where should public and private investment be directed?

Pollution charges and stricter environmental regulations will steer private investment toward more efficient and less-polluting technologies. A modest share of public investment could then be used to accelerate implementation of EC emission standards. However, the main focus for public investment should be on reducing emissions from small industrial units, the services sector, and households.

Reduce coal use in small boilers and houses. Most small-scale users of coal are happy to switch to gas, even if it costs more, because it is convenient and labor-saving. The major constraint is the availability of capacity in local gas distribution networks. In Bulgaria, gas supplies have been restricted to large industrial consumers, while in Poland, local pipelines were designed to meet household demand for cooking but not heating. Thus, a substantial investment program spread over a decade or more will be needed to develop the necessary infrastructure. Priority should clearly be given to areas where exposure to particulates and sulfur dioxide due to the burning of coal is particularly high.

Encourage household energy conservation. Anyone who has visited Eastern Europe in the winter knows that the standard way of dealing with overheated rooms is to leave the window open. Apartments, offices, and other buildings have few controls to regulate heating levels, and even meters to measure household consumption are rare. Installing these devices will take a long time, involving large amounts of manpower and money. In the meantime, measures to control temperatures and energy use for entire buildings would help significantly, even though there will be inevitable incentives for households to "free ride." For these changes to be effective, however, governments must not shy away from raising fuel prices sufficiently to reflect the full economic cost of consumption, including seasonal peak load charges where appropriate.

Find low-cost methods of treating sewage. Full treatment of the large volumes of sewage that pollute rivers and groundwater is far beyond the region's investment resources. Even so, some west European donors have urged that new municipal wastewater treatment plants conform to current EC requirements. This is a classic case of the best being the enemy of the good. The crucial challenge is to invest in sewage treatment facilities that remove 60–80 percent of the organic material and suspended solids, but which can be upgraded to provide fuller treatment when additional resources become available.

The way forward

The image of Eastern Europe as an ecological disaster is not only misleading but counterproductive, as it gives rise to the impression that enormous resources will be required. It is, therefore, crucial to offer both politicians and the public the prospect of substantial improvements in the next three to four years if effective environmental policies are to be implemented. The priority should be on reducing air pollution in localities where significant health damage is occurring. Three sets of measures would do this:

- Insist that nonferrous metal smelters either install filters to eliminate most of their heavy metal dust emissions, or close down within two to three years.
- Push prices of all fuels up to world market prices as quickly as possible and then impose additional taxes on the use of coal (with the highest rates for brown coal and lignite), gasoline, and diesel fuel. Rebates should be given to enterprises that can show that their emissions fall below an appropriate standard.
- Establish a fund, perhaps using revenues generated by the fuel taxes, that would finance a program to extend gas distribution in cities with the worst air quality. The fund should also make loans to enable households, cooperatives, and municipalities to convert from coal to gas boilers for domestic heating.

But it must be recognized that—based on the experience of Western Europe and North America—tackling the region's most important environmental problems will take one or two decades. Resources will be scarce and the demand for investment high. It is critical that clear priorities be established and the most cost-effective methods adopted. The rich countries have tended to rely upon inefficient environmental policies to avoid making difficult choices. Countries in Eastern Europe do not have the luxury of following such a wasteful path and should not be urged or forced to do so by their richer neighbors.

If, however, sensible policies are adopted, the quality of the environment could be greatly improved by the year 2000. London's experience with getting rid of its notorious smogs exemplifies what is possible. Even before gas became widely available, industrial smoke emissions fell by 60 percent from 1950 to 1960, and domestic emissions by 20 percent, because of a shift from coal to oil and electricity. The average number of smogs per year dropped from over 50 to less than 20 during this period, and the annual mean smoke concentration decreased by one half. In the following decade, as the Clean Air Act was implemented and natural gas use spread, the industrial smoke problem was effectively cured, while domestic emissions fell by almost 60 percent. Thus it seems perfectly reasonable for all east European countries to set themselves a target of reducing smoke and sulfur dioxide exposure by 75 percent over the next decade in all cities whose average exposures are more than twice the EC guidelines. ■

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The Road from Rio

Andrew Steer

Deputy Director, Environment Department, the World Bank

In June 1992, over 30,000 people met in Rio de Janeiro for the long-awaited United Nations Conference on Environment and Development (UNCED)—the "Earth Summit." The gathering involved 120 heads of state and government and their delegations, representing almost 180 nations, as well as nongovernmental organizations, business executives, religious groups, educators, students, and indigenous peoples. It was an event unprecedented in scale, scope, and expectations.

Some delegates thought the outcome was "deeply disappointing," while others described it as "a triumph." Some NGOs dismissed the conference as "a complete failure," while others found it "inspiring." The spokesman for the Group of 77 developing countries noted that "after this summit, the world will never be the same again." The conference certainly was disappointing for its lack of specific commitments to timetables for policy change and specific increases in aid programs. But it was also remarkably successful in forging a consensus around the urgent need to integrate policies for development and the environment.

What was agreed

When the 12-day meeting ended, the world's leaders had adopted by consensus three major agreements and more than 150 countries had signed two major conventions.

Rio Declaration. This brief statement of fundamental principles for guiding human behavior toward the environment sets out the rights and responsibilities of countries, communities, and individuals.

Agenda 21. An 800-page action plan for the 21st century, this ambitious blueprint embraces more than 100 program areas. Early chapters cover the social and economic aspects of sustainable development, including strategies for poverty reduction, health, and population, while the bulk of the document addresses specific environmental problems.

Statement on Forest Principles. This legally nonbinding document calls for accelerated progress in reforestation, afforestation, and conservation, along with more respect for the rights of forest dwellers and host nations in sharing the benefits.

Framework Convention on Climate Change. This treaty aims at stabilizing concentrations of "greenhouse gases" (mainly carbon dioxide). Industrial countries recognize the desirability of returning to their 1990 emissions levels by the year 2000. Although few specific measures or targets are included, a mechanism for deciding on stronger measures in the future, if warranted, was set up.

Biological Diversity Convention. This requires countries to adopt regulations to conserve biological resources, imposes legal responsibility upon nations for the behavior of their private companies in other countries, and calls for technical support and compensation to developing countries for the extraction of genetic materials.

Who will pay the bill?

The most hotly debated chapter of Agenda 21 dealt with how to finance the programs. The negotiated document recognizes that resources will only be available in the presence of economic growth and more open trade and investment. Funding will need to come from polluters (through charges and tradable permits), commercial channels, and voluntary and official sources. Additional concessionary funding will have to come from:

Official development assistance. Developed countries reaffirmed their commitment to reach the UN target of 0.7 percent of GNP (only the Netherlands and the Scandinavian countries now do this). Some countries, such as France and Germany, committed themselves to reach the target by the year 2000, although others, such as the United States (now at 0.2 percent), disassociated themselves from the target.

Global Environment Facility. The GEF (run jointly by the World Bank, the UN Environment Programme, and the UN Development Programme) was specified as a major financing channel for projects providing *global* benefits. It will be expanded to include land degradation issues (desertification and deforestation), as they fit with the areas already covered (global warming, the destruction of biodiversity, pollution of international waters, and ozone depletion). It will also be restructured to encourage universal membership, and a transparent decision-making system that provides a balanced and equitable representation of both recipient and donor interests. These changes should be in place by the end of 1993, when the GEF becomes a full-fledged facility.

International Development Association (IDA). As a way of helping the poorest countries tackle *national* environmental issues, Agenda 21 advocates an "earth increment" in the upcoming talks to replenish IDA (the Bank's concessional lending arm) that would be on top of the amount needed to maintain current funding in real terms.

What difference will Rio make?

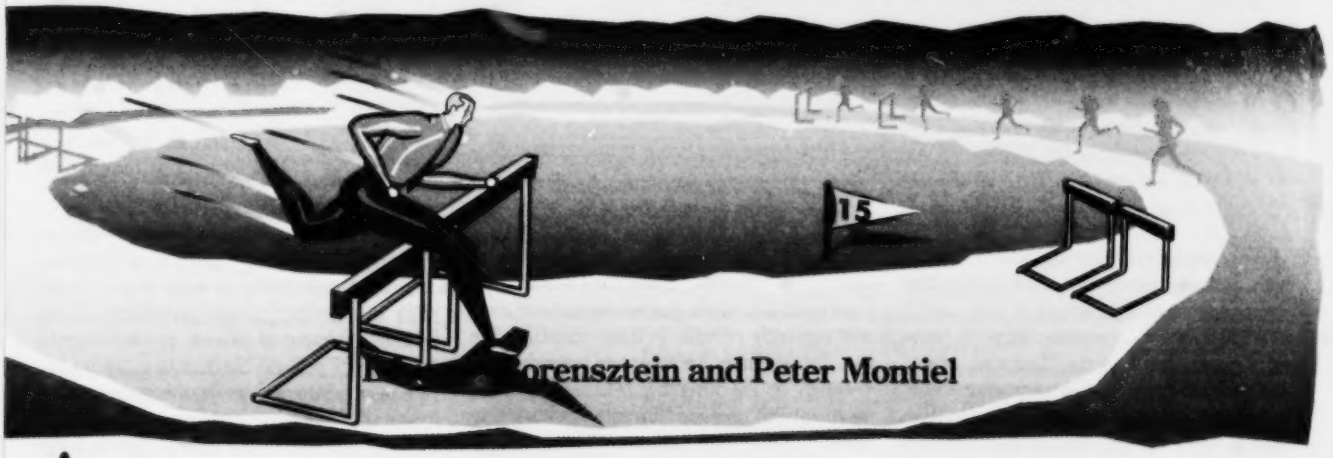
While the verdicts on the summit differed, all agreed that success must be measured not by words said, or written, but by actions taken. Maurice Strong, the summit's Secretary General, noted the similarity of many of the speeches to those given at the first environment conference in Stockholm 20 years ago, and the subsequent divergence of words and actions. With that in mind, Rio called upon the UN to create a high-level Commission on Sustainable Development to monitor progress in implementing Agenda 21.

What would happen if governments, aid agencies, and private corporations lived up to their commitments made in Rio? Much greater weight would be given to attacking poverty and reducing environmental damage. Charges for goods and services would reflect scarcity and environmental values. International trade would be freer. More investment would be channeled into sanitation, water supply, education, population, pollution control, and the protection of natural habitats. Official aid programs would be much higher in real terms. The development of renewable energy would become an international priority. Discrimination against girls in education and women in development would be eliminated. And governments worldwide would adhere to more democratic and participatory decisionmaking.

Rio has provided an important impetus to action on these measures, not by demonstrating their desirability, which is obvious, but by convincing leaders of the potentially tragic long-term costs of not taking action today. ■

When Will Eastern Europe Catch up with the West?

While the high productivity of capital augurs well for growth over the next five years, substantial structural reform will be needed to unleash investment and mobilize savings



orensztein and Peter Montiel

Although there is no doubt that recent revolutionary changes in the formerly socialist governments of Eastern Europe were primarily motivated by political goals, economic aspirations have also been an important driving force. Indeed, it is the expectation of achieving living standards comparable to those of west European nations that has carried these countries through the painful process of transformation into market economies.

What are the prospects for achieving such standards of living, and at what cost? Sustained economic growth requires the accumulation of productive assets (labor, human capital, and physical capital) via investment. The amount of investment required for the economies of the previously centrally planned economies to start "catching up" with Western Europe will depend on the initial economic situation, which is relatively favorable in terms of available human resources. The real challenge thus lies in ensuring that economic agents—both domestic and foreign—have incentives to acquire productive assets. Encouraging such investment demand is, however, only half the challenge; equally important is the promotion of sufficient domestic and foreign saving to support the necessary investment.

This article, based on a more extensive study (see box), evaluates the nature of the policy challenge facing east European countries in the areas of growth, saving, and investment by focusing on the experiences of Czechoslovakia, Hungary, and Poland.

How much capital accumulation?

The amount of capital required to achieve targeted rates of economic growth in developing countries has long been calculated by the "financing needs" approach. Straightforward applications of this approach to east European economies yields estimates of required investment that are much too large to be feasible, even by the previous central planning standards, when investment rates tended to exceed the typical rates observed in market economies.

Consider, for example, the case of an east European economy with an initial level of per capita real GNP equivalent to 40 percent of west European levels, and suppose that the goal is to catch up with Western Europe in 15 years. Assuming that per capita GNP grows at 1 percent per year in Western Europe in the meantime, the country would have to average an annual per capita growth rate of 7½ percent a year during the 15-year long "catch-up" period. With annual population growth of 1 percent and a rate of depreciation of capital of 4 percent a year, and assuming an incremental capital/output ratio (ICOR) of 2.5, this catch-up process would require average annual investment rates of over 30 percent of GNP.

Such high investment needs naturally create doubts about the ability of these economies to catch up. These types of calculations may be flawed in several ways, however. First, such calculations do not take into account the contributions of improved resource allocation and greater productive efficiency to economic growth. Second, the ICOR is not an immutable constant. It depends, among other things, on the supply of factors of production, such as human capital, which are complementary to physical capital. When such factors are plentiful, an incremental unit of capital will be very productive, the ICOR will be low, and the amount of investment required to achieve a given growth rate, at least over the short run, will also be low.

Certainly, both these considerations apply to Eastern Europe. The switch to a market system should greatly enhance the efficiency of these economies and sustain a higher growth rate than one based on capital and labor accumulation. In addition, investments—particularly in physical plant and equipment—are largely irreversible in the sense that they cannot be converted to other uses. The stock of "useful" capital that could be productively employed in a market economy, therefore, might be very small. The relative capital scarcity of these economies thus implies high rates of productivity of capital.

For details of the research reported in this article, see "Savings, Investment, and Growth" by Eduardo Borensztein and Peter Montiel, IMF Working Paper WP/91/61, available from the authors.

Inefficiency of resource allocation: Czechoslovakia, Hungary, and Poland

	Actual GDP as a percent of US GDP (1985)	Predicted GDP	GDP shortfall (in percent)	Actual average investment as share of GDP (1965–85)	Required investment as share of GDP	Redundant investment (in percent)	Redundant resources (in percent)
Sample averages [1]	34.7	—	—	19.4	—	—	—
Czechoslovakia	40.0	64.0	37.5	26.3	12.5	52.5	17.0
Hungary	29.0	65.0	55.4	28.8	7.1	75.4	29.2
Poland	26.0	56.0	46.4	24.0	6.5	72.9	28.0

Source: IMF Working Paper WP/91/61.
[1] This is a sample of 75 (industrial and developing) countries included in the regression. See Mankiw, Romer, and Weil (1990).

These countries also have relatively abundant human capital that comprises a highly educated labor force. Investment in new, useful, physical capital is, therefore, likely to prove more productive than the "financing needs" approach might suggest. Even modest investment rates may achieve satisfactory growth rates in the reforming economies of Eastern Europe.

Quantitative results

To provide more rigor to our observations, we estimated the extent to which general inefficiency in resource allocation affected the levels of per capita output achieved under central planning. For this purpose, we used a study by Gregory Mankiw, David Romer, and David Weil ("A Contribution to the Empirics of Economic Growth," NBER Working Paper No. 3541, December 1990), where econometric techniques were used to explain the levels of real per capita GDP in a large cross-section of countries on the basis of historical rates of investment and of human capital accumulation (using education as a proxy variable). By substituting the corresponding levels of investment and educational attainment for Czechoslovakia, Hungary, and Poland into their estimated equations, we derived "predicted" levels of per capita GDP for these countries. The difference between actual per capita GDP and the predicted values implied by the empirical equation was substantial, ranging from 37 to over 55 percent, as shown in the accompanying table. The estimated "shortfall" or output deficiency tells us that resources were generally used inefficiently in the past, suggesting a substantial misallocation of physical capital.

Conversely, we can compute the proportion of investment that has been "wasted" by a comparison with the performance of other countries in the regression study. That is, we can use the regression results to determine how much "efficient" investment would have been needed to attain the per capita GDP level that currently prevails in these countries. We can then estimate the extent of redundant investment as the difference between actual investment and necessary investment thus measured. These calculations indicate that between 53 and 75 percent of the fixed investment has been in excess of the amounts required to obtain the observed output performance in the three countries.

The above calculations ascribe all the productive inefficiency to fixed investment. More realistically, inefficiencies must also result from other factors of production. In fact, anecdotal evidence suggests widespread redundancy of labor and poor work habits in public enterprises. If one assumes that all productive factors have been underutilized in a similar proportion, the common rate of redundancy for all factors ranges between 17 to nearly 30 percent for these three countries.

On the basis of the above estimates, we calculated prospective growth rates that could be achieved in Czechoslovakia, Hungary, and Poland. We assumed, for the sake of illustration, that physical investment would be constant at 22 percent of GDP, which is a very conservative estimate compared with historical standards. Our simulations show that even under such modest rates of fixed investment, these countries could achieve healthy growth rates of per capita GDP—an average of between 6 and 7 percent for Hungary and Poland and about 3½ percent for Czechoslovakia—over the next five years. Growth rates would be slower in later years, however, if substantial amounts of capital have already been accumulated. Medium-term growth prospects for these countries are good, therefore, if moderate amounts of efficient domestic investment are forthcoming.

Prospects for investment

But will domestic investment be forthcoming? While the analysis suggests that the rates of return on investment may be high for the reforming east European economies, there are many other factors in the current transitional phase that may dampen or delay future investment projects. These factors, which are mostly related to the structural reform process, are discussed below.

Private investment. There are important legal and institutional conditions that must, to some degree, be in place to stimulate private investment. These include a system of private property rights, the removal of legal barriers to entry by private agents into new fields of economic activity, and the availability of finance. Although a major revamping of the legal system is under way in many of the reforming economies, sorting out existing claims on assets will take longer to resolve because of issues such as restitution of property and the rights of worker councils.

Even with these conditions in place and the promise of high expected returns, investors may be slow to commit because of the uncertainty of the transition process. Most capital investment tends to be irreversible, so that any change in the economic environment that alters the profitability of an investment could pose large potential losses for investors. In this setting, an investor may opt to wait for new information that might affect the desirability and timing of the investment. Thus, private investors—both domestic and foreign—are likely to remain on the sidelines in the reforming countries until major sources of uncertainty are resolved.

Two major sources of uncertainty are worth highlighting. One is linked to the privatization of large firms. Investors would certainly like to know who their competitors are and whether existing productive assets will be available for purchase. The other is the credibility of policy reforms. This relates to the public's perceptions about both the internal consistency of the adjustment program and the government's willingness to stay the course even in the face of mounting social costs in the short run. Unless investors view the adjustment program as fully credible in both senses, the possibility of a future policy reversal would decrease the attractiveness of investment. In fact, a similar

problem is encountered by any reforming economy, and experience has shown that private investment ensues only after credibility has been established. Credibility could be enhanced by a wide range of measures, from ensuring the viability of the financial system, to a "safety net" for displaced workers, to political liberalization and the acceptance of conditional foreign assistance.

Public investment. Since privatization is likely to be a slow process, large-scale enterprises in most east European countries are likely to remain in public hands for some time and a large share of investment decisions will be made by the public sector. The problem is that during the transition period preceding privatization, the system of incentives for investment by public enterprises may not be favorable. For even though these enterprises will not have a central plan, they will also not be following a clear profit maximization objective because management is not yet answerable to private owners. In such circumstances, managers have more incentives to sell enterprise assets (and increase wages) than to initiate new investments. This perverse system of incentives had the consequence of spurring a number of "spontaneous privatizations" in Hungary and Poland, where managers sold enterprises under favorable conditions for buyers.

A step toward achieving profit maximization on the part of public enterprises (and therefore investment efficiency) is to fully liberalize prices and to impose "hard" budget constraints on enterprises. Price liberalization has basically been implemented in Czechoslovakia and Poland, and is in progress in Hungary. The imposition of hard budget constraints, however, seems more difficult. Such a constraint requires, among other things, that credit be allocated according to profitability criteria. A fundamental problem with both enterprises and banks run by the public sector is that the perception of risk may be distorted. Banks may perceive that the state will ultimately prevent the bankruptcy of a large public enterprise and may, therefore, continue to lend to failing enterprises. This suggests that opening up the financial sector to new private entrants, liberalizing the financial system, and privatizing financial institutions should also be early steps in the reform process.

Prospects for saving

To the extent that the levels of investment required for satisfactory growth performance are indeed forthcoming in the reforming east European countries, domestic saving has a key role to play in permitting investment to be financed without generating macroeconomic imbalances. Yet here, too, the situation is fraught with uncertainty. Several observations are pertinent concerning the saving contribution of the public and private sector.

Private sector saving. This raises a number of issues, some of which are particular to the reforming economies in Eastern Europe. One such issue is the implications for saving of the "monetary overhang," that is, the accumulation of idle money balances under central planning owing to the limited availability of goods. In the context of market liberalization, such an "overhang" is expected to lead to a spending binge on the part of households, with obvious consequences for domestic saving. While there are both theoretical and empirical reasons to doubt the importance of this phenomenon, at the very least we would expect substantial wealth reallocations upon liberalization and increased demand for consumer durables. This would lead to a reduction in measured household saving.

A second issue is the potential effect on saving of massive privatizations. It is likely that "giveaway" privatizations would reduce household saving, because households would feel wealthier. Although such a giveaway privatization would have the indirect effect of increasing the tax burden on the private sector—as the government has to make up the revenue loss from giving away its assets—it is likely that the net effect would be perceived by capital markets as an increase in private wealth.

Finally, prospects for external inflows are also uncertain, at least in the short run. Private foreign investors are likely to be deterred in the near term by some of the same sources of uncertainty that give pause to domestic investors. In addition, current high levels of indebtedness in Poland and Hungary would place some limits on the amount of resources that could be borrowed from private sources. Furthermore, the dismantling of the Council of Mutual Economic Assistance trading arrangements has meant the loss of a foreign subsidy for the east European economies, which was implicit in the low prices for oil and other industrial inputs. In the immediate run, official assistance seems to offer the best prospects of providing foreign saving on a meaningful scale, including assistance in the form of the debt forgiveness granted to Poland by the Paris Club early in 1991.

Public sector saving. As the contributions of the domestic private and the external sectors are likely to be limited, it is obvious that the public sector will need to make a substantial contribution. In view of the significant demands on public spending, and especially in the areas of "safety nets," infrastructure, and the environment, developing an efficient revenue base for the public sector must be accorded high priority.

The raising of revenue will imply the design of new revenue systems, which may prove difficult to administer in the short run. Though several of the reforming economies registered an improved fiscal position in 1990, this may have been a transitory phenomenon, primarily resulting from reductions in real wages that accompanied price liberalization, leading to improved profit performance of public enterprises and reduced subsidies. Thus the revenue challenge remains to be met.

Conclusion

Our message, then, is mixed. On the one hand, prospects for economic growth in Eastern Europe are brighter than simple "financing needs" calculations would suggest, primarily because the levels of investment required to achieve healthy per capita growth rates are probably not as large as commonly supposed. This is because investment in physical capital will likely pay large social dividends, essentially because of the presence of complementary factors of production. On the other hand, achieving even moderate levels of domestic investment and saving will pose a substantial policy challenge, namely, to proceed quickly and resolutely with the structural reform process, while protecting the credibility and stability of the new economic system. ■

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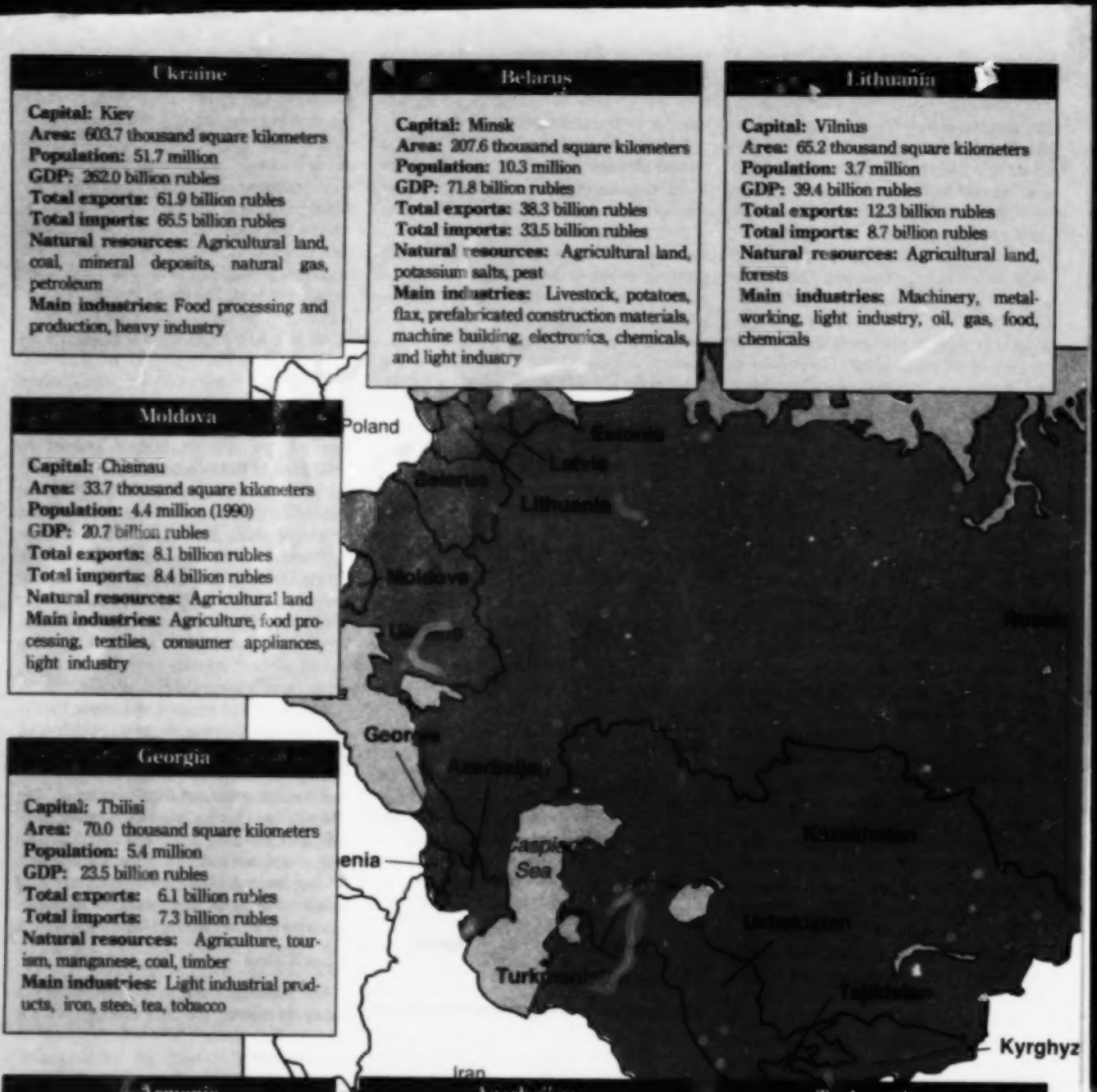


Ukraine

Capital: Kiev
Area: 603.7 thousand square kilometers
Population: 51.7 million
GDP: 262.0 billion rubles
Total exports: 61.9 billion rubles
Total imports: 65.5 billion rubles
Natural resources: Agricultural land, coal, mineral deposits, natural gas, petroleum
Main industries: Food processing and production, heavy industry

Belarus

Capital: Minsk
Area: 207.6 thousand square kilometers
Population: 10.3 million
GDP: 71.8 billion rubles
Total exports: 38.3 billion rubles
Total imports: 33.5 billion rubles
Natural resources: Agricultural land, potassium salts, peat
Main industries: Livestock, potatoes, flax, prefabricated construction materials, machine building, electronics, chemicals, and light industry

Lithuania

Capital: Vilnius
Area: 65.2 thousand square kilometers
Population: 3.7 million
GDP: 39.4 billion rubles
Total exports: 12.3 billion rubles
Total imports: 8.7 billion rubles
Natural resources: Agricultural land, forests
Main industries: Machinery, metal-working, light industry, oil, gas, food, chemicals

Moldova

Capital: Chisinau
Area: 33.7 thousand square kilometers
Population: 4.4 million (1990)
GDP: 20.7 billion rubles
Total exports: 8.1 billion rubles
Total imports: 8.4 billion rubles
Natural resources: Agricultural land
Main industries: Agriculture, food processing, textiles, consumer appliances, light industry

Georgia

Capital: Tbilisi
Area: 70.0 thousand square kilometers
Population: 5.4 million
GDP: 23.5 billion rubles
Total exports: 6.1 billion rubles
Total imports: 7.3 billion rubles
Natural resources: Agriculture, tourism, manganese, coal, timber
Main industries: Light industrial products, iron, steel, tea, tobacco

Armenia

Capital: Yerevan
Area: 29.8 thousand square kilometers
Population: 3.3 million
GDP: 15.7 billion rubles
Total exports: 6.5 billion rubles
Total imports: 8.3 billion rubles
Natural resources: Agricultural land
Main industries: Light industry, machine-building and metallurgy, food processing, and chemical production

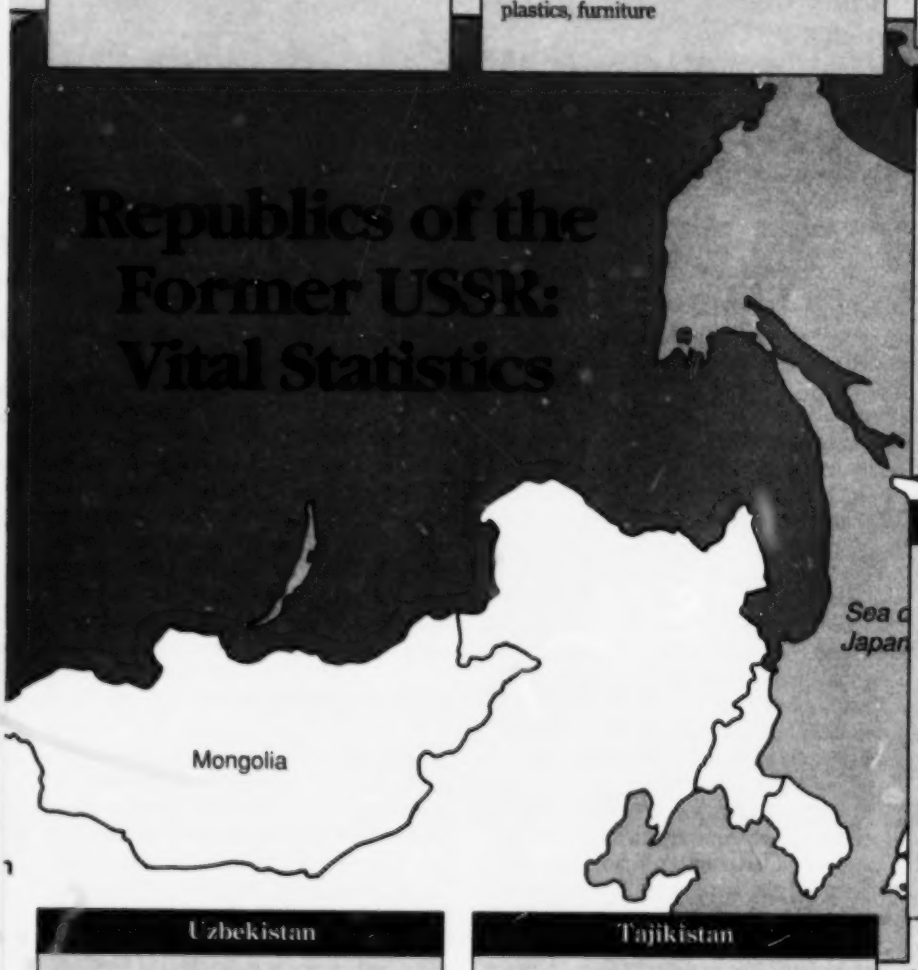
Azerbaijan

Capital: Baku
Area: 86.6 thousand square kilometers
Population: 7.1 million
GDP: 22.4 billion rubles
Total exports: 11.5 billion rubles
Total imports: 8.8 billion rubles
Natural resources: Agricultural land, oil, natural gas, iron ore
Main industries: Oil, oil production equipment, petrochemicals, food and beverages, garments, electrical equipment

Turkmenistan

Capital: Ashkhabad
Area: 488.0 thousand square kilometers
Population: 3.8 million
GDP: 18.6 billion rubles
Total exports: 7.8 billion rubles
Total imports: 6.9 billion rubles
Natural resources: Natural gas, oil, iodine-bromine, sodium sulphate, salts
Main industries: Textiles, gas and oil processing, chemicals, electricity-generating industries

Republics of the Former USSR: Vital Statistics



Latvia

Capital: Riga
Area: 64.6 thousand square kilometers
Population: 2.7 million
GDP: 22.3 billion rubles
Total exports: 8.8 billion rubles
Total imports: 6.5 billion rubles
Natural resources: Peat, dolomite, limestone, gypsum, amber, gravel, sand
Main industries: Machinery, food products, textiles, chemicals

Estonia

Capital: Tallinn
Area: 45.2 thousand square kilometers
Population: 1.6 million
GDP: 17.3 billion rubles
Total exports: 5.4 billion rubles
Total imports: 4.4 billion rubles
Natural resources: Timber, oil shale, limestone
Main industries: Fish and food products, textiles, metalworking, chemicals, plastics, furniture

Russian Federation

Capital: Moscow
Area: 17.1 million square kilometers
Population: 148.5 million
GDP: 1,130.0 billion rubles
Total exports: 210.1 billion rubles
Total imports: 182.0 billion rubles
Natural resources: Grain, potatoes, livestock, coal, oil, natural gas, diamonds, phosphorites, potassium salts
Main industries: Oil, natural gas, machinery, chemicals

Kazakhstan

Capital: Alma-Ata
Area: 2.7 million square kilometers
Population: 16.9 million
GDP: 92.0 billion rubles
Total exports: 15.8 billion rubles
Total imports: 22 billion rubles
Natural resources: Petrol, grain, chrome, lead, wolfram, copper, zinc, coal, iron ore, wool, meat
Main industries: Metallurgy, heavy machinery and machine tools, petrochemicals, agro-processing, textiles

Kyrghyzstan

Capital: Bishkek
Area: 198.5 thousand square kilometers
Population: 4.4 million
GDP: 15.3 billion rubles
Total exports: 6.6 billion rubles
Total imports: 7.4 billion rubles
Natural resources: Hydroelectricity, gold, mercury, uranium, coal
Main industries: Metallurgy, agricultural and other machinery, food and tobacco processing, electronics, textiles, sugar refineries

Uzbekistan

Capital: Tashkent
Area: 450 thousand square kilometers
Population: 21.3 million
GDP: 56.3 billion rubles
Total exports: 19.6 billion rubles
Total imports: 20.2 billion rubles
Natural resources: Cotton, natural gas, coal, gold, silver, copper, lead, zinc, wolfram, tungsten, petroleum
Main industries: Agriculture, cotton harvesters, textile machinery, chemicals, metallurgy, aircrafts

Tajikistan

Capital: Dushanbe
Area: 143.1 thousand square kilometers
Population: 5.3 million
GDP: 13.0 billion rubles
Total exports: 4.3 billion rubles
Total imports: 3.8 billion rubles
Natural resources: Cotton, dairy production, wheat
Main industries: Labor-intensive industries, agricultural products processing, engineering, metalworking, power transformers

* *All data refer to 1991 unless otherwise noted.*

This presentation is based on the *Economic Review Series*, updated where necessary. This series was prepared by the IMF staff on the economy of each of the republics that constituted the USSR. The series includes two companion studies; one reviews the economy of the USSR in 1991, and the other provides an overview of common policy issues and major interrepublic economic relations. They are available in English from IMF Publication Services for $10.00 each.

A Single Currency for the European Community

The Maastricht agreement provides a blueprint for a European economic and monetary union

Karl Habermeier and Horst Ungerer

The past five years have seen a remarkable acceleration of economic integration in Western Europe. The meeting of European heads of state and government in the Dutch city of Maastricht in December 1991 not only reaffirmed the commitment of the European Community (EC) to the creation of a single market but also resulted in agreement on the creation of an economic and monetary union (EMU). More specifically, the Maastricht agreement provides a framework for the transition to a common monetary policy and to a single EC currency managed by an independent European central bank.

The participants also agreed on a treaty that formally establishes a European Union, commits the EC's member states to strive for closer cooperation on foreign and security policy, and somewhat expands the powers of the European Parliament. The EC Treaty requires that this agreement be "ratified by all the member states in accordance with their respective constitutional requirements." The rejection of the Maastricht agreement by a small majority of the Danish voters in a binding referendum held on June 2, 1992, has complicated the process. It cannot be excluded that other EC member states may fail to ratify the Maastricht agreement. Various solutions are being discussed, including partially renegotiating the draft treaty; attaching a protocol that could temporarily exempt Denmark or other countries in a similar position from the treaty obligations; and—although this is seen as less likely—negotiating a separate treaty, outside the legal framework of the EC, by other EC countries.

The agreement on EMU may come to be seen as a major event in the economic history of Europe. A European monetary constitution with the goal of price stability would not only shape the economic fortunes of the EC member states but would also exercise a worldwide influence. It is likely to serve as an economic policy guidepost for prospective EC members, such as Austria, Sweden, and Finland, and the emerging market economies of Central and Eastern Europe, which expect to tie themselves more closely to the EC. Monetary union would also provide the EC with a currency that matches its weight in the world economy (see "Europe—The Quest for Monetary Integration," by Horst Ungerer, *Finance & Development*, December 1990).

The creation of an economic and monetary union is a complex task, both technically and politically, that requires a high degree of convergence of economic policies and performance. At the same time, it would significantly reduce the economic sovereignty of the participating states. Indeed, the often different economic and monetary policy traditions of the EC member states have given rise to conflicts that were resolved only after protracted negotiations. Agreement hinged on a number of fundamental issues: the timing of the union, the conditions for participation, and the independence of monetary policy from government influence. More generally, there was the question regarding to what extent countries would be willing to cede national sovereignty to EC institutions. These issues, among others, also dominate the current debate over ratification of the treaty.

Under the Maastricht agreement, EMU would be reached in three stages. During the first two stages, member governments would endeavor to achieve greater convergence of their economies as measured by four criteria: inflation, interest rates, exchange rate stability, and the sustainability of the fiscal position. In the third stage, which could begin as early as 1997 but no later than 1999, member states that meet the economic criteria would irrevocably fix their exchange rates and issue a single currency. This article presents the main features of the draft treaty on EMU.

Historical background

In the late 1950s, the newly formed European Economic Community (EEC) was, by and large, conceived as a customs union, without a strong commitment to the coordination of economic and monetary policies. By the end of the 1960s, when the customs union had been successfully built, plans were already being laid for an eventual economic and monetary union. Following the first summit conference of the six EC member states in 1969, the so-called Werner Committee was established to elaborate a blueprint for the transition to an economic and monetary union. However, the collapse of the Bretton Woods system in March 1973 and the economic instability engendered by rising oil prices in 1973–74 hampered movement toward more monetary integration. Monetary cooperation was limited to the establishment of the European Common Margins Agreement—the "snake"—which quickly shrank to a "DM

zone" in which the currencies of some of the smaller European countries—Belgium, Luxembourg, the Netherlands, Norway, Sweden, and Austria—were grouped around the deutsche mark.

The snake was superseded by the European Monetary System (EMS) in March 1979, an arrangement that has survived largely unchanged to the present day. The objective of the EMS was to create a European zone of exchange rate and price stability. Despite a number of general exchange rate realignments in the early 1980s, the EMS is now considered a success by most observers. Increased convergence of economic performance among most of the major countries and the anchor role played by the deutsche mark have made it possible to avoid a general realignment of exchange rates since 1987.

In June 1988, the European Council appointed the Delors Committee to devise a new plan for an economic and monetary union. Its report, submitted in April 1989, proposed a three-stage approach, culminating in the creation of a single EC currency. Monetary policy would be made by a European System of Central Banks (ESCB), consisting of a European Central Bank (ECB) and the central banks of the member states. The EC Commission and the Council of Ministers would be responsible for coordinating economic, and especially fiscal, policy in the EC. There was concern that unsustainable fiscal policy in one or more countries could undermine the common monetary policy.

The European Council later decided to begin the first stage of economic and monetary union on July 1, 1990, and to initiate two intergovernmental conferences—one on economic and monetary union and the other on political union—in December 1990.

Main events leading to economic and monetary union

January 1, 1958: Founding of the European Economic Community

December 1–2, 1969: Meeting of European Community heads of state and government at The Hague

October 1970: Werner Report

April 24, 1972: Establishment of the European Common Margins Agreement (the "snake")

March 13, 1979: Establishment of the European Monetary System

April 17, 1989: Report of the Delors Committee

July 1, 1990: Beginning of the first stage of the Economic and Monetary Union (EMU)

December 13, 1990: Start of intergovernmental conferences on EMU and political union

December 10, 1991: Maastricht agreement on EMU and political union

February 7, 1992: Signing of treaty on EMU and political union

A European monetary constitution

Even before the conference on EMU began, there was broad agreement that the chief goal of monetary policy should be to safeguard price stability and that an independent central bank offered the best assurance of such a monetary policy. Further, economic—in particular fiscal—policy coordination would have to be enhanced.

Central bank independence. The concept of central bank independence has several facets. First, the central bank must be politically independent, neither seeking nor taking instructions from national governments or other EC institutions. Second, it must be functionally independent; that is, the central bank must have at its disposal the instruments needed to effectively conduct monetary policy. Third, members of the decision-making bodies of the central bank must be personally independent; this can be achieved by appointing members for a sufficiently long term and by compensating them appropriately.

After considerable deliberations, the Maastricht treaty provided the ESCB with a high degree of political independence. Policy will be made by a Governing Council consisting of a board of directors and the governors of the national central banks. Members of the board of directors are to be appointed for a single term of eight years. National central bank governors are to be appointed for terms of at least five years, and the national central banks are to be made independent of government direction before the beginning of stage three.

A crucial issue that determines whether the central bank is truly functionally independent is exchange rate policy. The debate on this question started with a basic consensus that the choice of an exchange rate system (e.g., between a par value system and floating exchange rates) would be the province of the political authorities, or, in the EC, of the Council of Ministers. Carrying out day-to-day exchange market intervention would be the responsibility of the ECB. There was significant disagreement, however, about who would be in charge of determining intervention policy vis-à-vis third currencies in the absence of a supraregional exchange rate system. Some countries argued that decisions on foreign exchange intervention policy should fall entirely within the domain of the central bank, and that any departure from this principle would create a loophole that could undermine the bank's monetary policy. Others believed that the exchange rate was a central instrument of economic policy, with a profound impact on employment and growth, and that final responsibility for exchange rate policy should, therefore, be placed in governments' hands.

In the draft treaty, one finds something of a compromise between these positions, although greater weight was given to the first point of view. The choice of an exchange rate system for the single currency vis-à-vis third countries is left to the Council of Ministers. However, such decisions must be taken unanimously, after consultation with the ECB, and must not jeopardize price stability. If a par value system is chosen, a qualified majority of the Council must approve the central rates. In the absence of an exchange rate system, the Council, acting by qualified majority vote, may provide orientations for exchange rate policy, but only if these do not impair the central bank's ability to maintain price stability.

Guidelines for economic policy. A prolonged debate also took place on the coordination of economic policy in the negotiations leading up to the treaty. Some countries, notably France, advocated the formulation of guidelines for economic policy, including monetary policy, at the level of the European Council.

The draft treaty made no mention of guidelines for monetary policy. Instead, it allows the Council of Ministers, by qualified majority voting, to devise "broad guidelines" for economic policy in the EC, which are submitted to the European Council for discussion. On this basis and as a final step, the Council of Ministers, again acting by qualified majority vote, may issue "recommendations" for economic policy.

Fiscal stability. From the beginning, there was widespread agreement that a stable

monetary union would require close coordination of national fiscal policies, as well as some kind of restriction on public sector deficits and debt. Excessive fiscal deficits, often financed by monetary expansion, endanger price stability and should, therefore, be avoided. Further, it was thought that market discipline, in the form of rising risk premia on interest rates, would by itself be insufficient to rein in an unsustainable fiscal policy. As the experience with developing country debt had shown, financial markets often react too little, too late, and then tend to panic. The fear was that under a monetary union, the costs of excessive fiscal deficits would have to be borne by all countries and that undisciplined countries would have to be bailed out by the other members.

An excessive deficit was defined, in a protocol attached to the draft treaty, as a general government deficit that exceeds 3 percent of GDP. In addition to the limit on fiscal deficits, the treaty also specifies a limit on the public debt ratio of 60 percent of GDP. More highly indebted countries are expected to take measures to ensure that their debt ratio approaches this benchmark at a satisfactory pace.

To enforce fiscal discipline, the treaty provides for sanctions. It also envisages an initial phase before actual sanctions are imposed, in which the Council of Ministers may issue warnings and request the adoption of appropriate measures. An effort was made to ensure that sanctions would be both effective and feasible. In increasing order of severity, they are:

- publication of detailed economic and budgetary information in connection with sales of debt instruments;
- reconsideration of lending to the member by the European Investment Bank;
- placement of an interest-free deposit with the EC until the problem is corrected; and
- fines of an appropriate size.

Transition to the third stage

Participation in the EMU described above will require profound changes in the economic policies and institutions of many EC member states. For some countries, these changes will mean nothing less than a shift in the framework governing economic policy. Not only must there be further convergence of inflation and interest rates in order to engender greater exchange rate stability, but fiscal deficits and debt also must be brought under control. Moreover, the instruments of monetary policy, financial market laws, and economic statistics will need to be harmonized.

The intergovernmental conference devoted great attention to the transition to stage three, principally to the content and length of the second stage, which is scheduled to begin on January 1, 1994. All participants recognized that the length of the second stage and the timing of entry into stage three would depend on the degree and speed of economic and financial convergence achieved among the signatories. At the time the agreement was being negotiated, a minority of countries with low inflation rates and sound public finances would already have been in a position to form a *de facto* monetary union. However, several member states were concerned that there should not be a "Europe of two speeds." The negotiators, therefore, consciously sought a formula that would in principle allow all countries to simultaneously enter into an economic and monetary union, while allowing those that were unable to meet the basic economic requirements a temporary reprieve.

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The draft treaty accomplished this by laying out both a timetable and economic convergence criteria for the transition to stage three. A country must fully meet the following requirements for the adoption of a single currency: Its inflation rate must be not more than 1½ percentage points higher than the inflation rate of the three member states with the lowest inflation; its interest rates on long-term government debt must be no more than 2 percentage points higher than comparable interest rates in the same three member states; its exchange rate must be maintained within the narrow band of fluctuation of the exchange rate mechanism (ERM) for two years without a devaluation at the initiative of the country in question; and the fiscal criteria must be satisfied.

The European Council will, however, have discretion in applying these criteria and will take decisions by qualified majority voting. In coming to a decision, the Council will consider other economic indicators, such as unit labor costs, the current account of the balance of payments, and progress made toward implementing the single market program. The wording of the treaty also allows ample leeway in judging fiscal policy. The deficit must have "declined substantially and continuously and have reached a level that comes close to the reference value," and the debt ratio must be "sufficiently diminishing and approaching the reference value at a satisfactory pace."

A first opportunity to set a date for the transition to stage three will come in 1996. By the end of that year, the heads of state and government will establish, by qualified majority voting, whether a majority of the member states fulfills the economic criteria for the adoption of a single currency and whether it is appropriate for the EC to enter the third stage. If so, a date will be set for the beginning of stage three. The ECB will then be created and will issue a single currency, to be called the ECU, sometime after the beginning of stage three.

Countries that do not meet the economic criteria will obtain an exemption from the treaty and may join later as they are judged to meet the economic conditions. Countries with an exemption will not be represented in the policy-making bodies of the ECB (i.e., the Board of Directors and the Governing Council).

If most countries do not fulfill the economic criteria by the end of 1997, stage three will begin on January 1, 1999. This means that those that meet the economic conditions will be permitted to form a monetary union, while all other countries will obtain a derogation.

These provisions apply to all countries, with the exception of the United Kingdom and Denmark. From the beginning, the government of the United Kingdom had strong reservations about efforts to form a monetary union by creating new EC institutions. Instead, it advocated a more evolutionary approach to monetary union via the creation of a parallel currency, the "hard ECU," which would compete with other currencies, gradually displacing those that were weak.

In order to avert a veto of the entire treaty by the United Kingdom, a compromise was reached, allowing the United Kingdom to opt out of participation in the economic and monetary union, even if it fulfills the necessary

economic conditions. However, the United Kingdom will retain the right to join the monetary union at a later date. Denmark also requested and obtained a special exception.

Views also differed on the nature and tasks of the common monetary institutions to be established at the start of stage two. Some governments advocated creating the ECB at the beginning of the second stage, with authority for monetary policy, however, remaining in the hands of national institutions. Germany and the Netherlands strongly opposed this proposal on the grounds that if such a central bank were endowed with significant powers, it might undermine national monetary sovereignty during stage two.

A compromise proposal envisaged that the existing Committee of Central Bank Governors be augmented by an outside president and assisted by a small technical staff. Such a body, to be called a European Monetary Institute, will be created at the beginning of the second stage. It has no direct authority over monetary policy, although it may formulate recommendations. Its main tasks will be to strengthen cooperation among central banks, monitor developments in the EMS, and make technical preparations for the establishment of the ESCB. The Institute may also manage foreign exchange reserves as an agent for national central banks.

Some of the poorer EC member countries, such as Greece, Ireland, Portugal, and Spain, feared that a monetary policy geared toward EC-wide price stability might damage their prospects for economic growth and expressed a desire for a "cohesion fund" to support poorer countries. Although the creation of such a fund was agreed in principle, EC member states were reluctant to take on further financial commitments.

Final thoughts

The agreement of Maastricht on economic and monetary union of the EC provides a solid legal basis for a single currency and a common monetary policy. However, the treaty by itself will not guarantee monetary and price stability. Since the economic criteria, especially the fiscal criteria, allow considerable discretion, the fear is that countries that are not ready to adopt the single currency on purely economic grounds may nonetheless be permitted to do so for political reasons. In the past, not all EC member states have shown a strong commitment to stability-oriented macroeconomic policies. In particular, budget deficits and public debt of some countries are far higher than would be consistent with medium-term financial stability.

Finally, a single currency means that changes in relative labor costs and other prices among countries can no longer be offset by exchange rate changes. The loss of the exchange rate instrument, therefore, requires that national wage settlements be closely linked to developments in productivity. Whether this is possible will depend to a large extent on labor market institutions, especially the rules governing negotiations between employers and trade unions. Price stability will also crucially depend on whether a popular consensus can be reached in Europe on the desirability and, indeed, the necessity of a stability-oriented monetary and fiscal policy. ■

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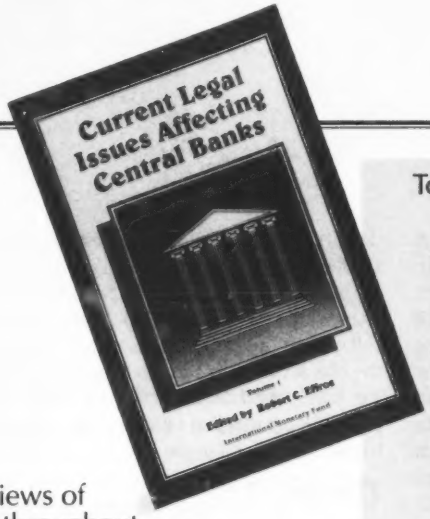
edited by Robert C. Effros



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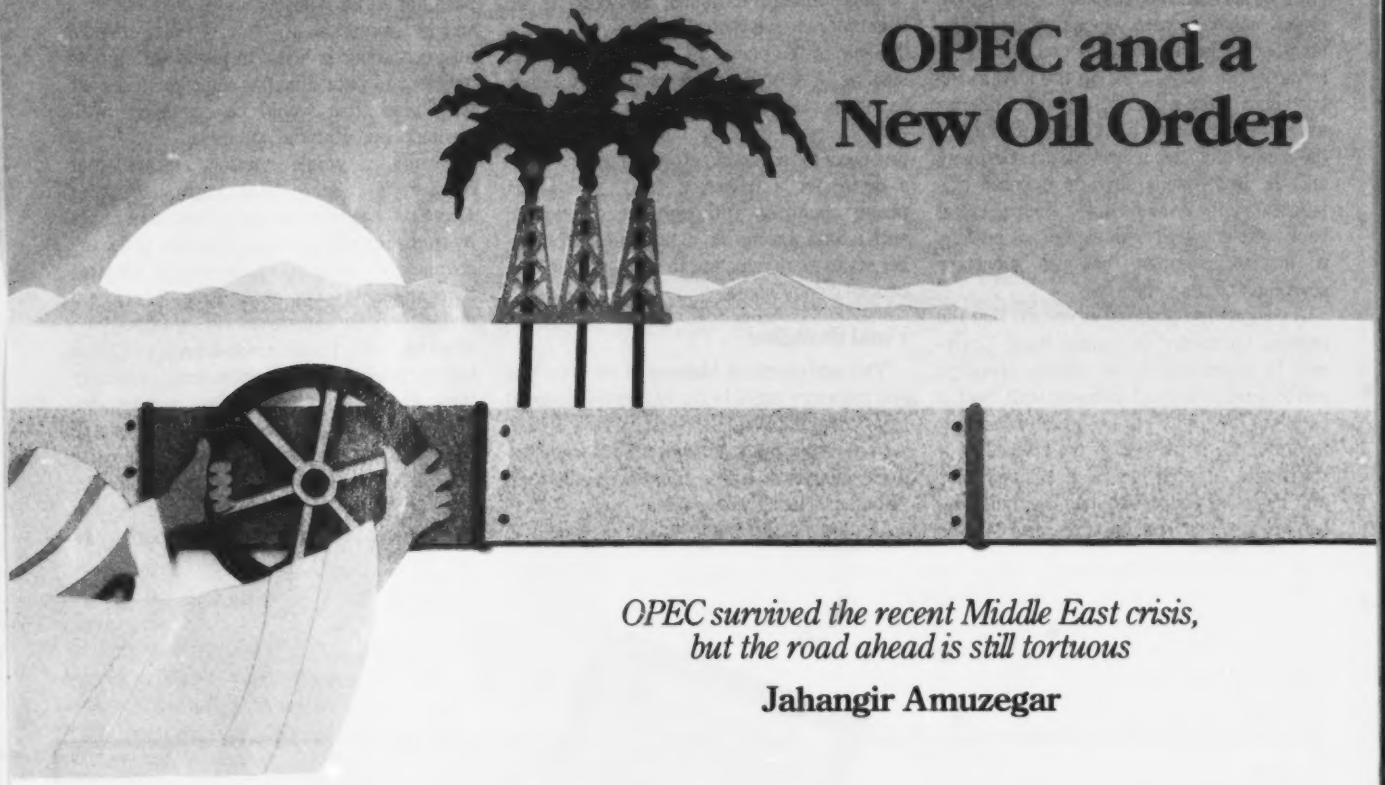
OPEC and a New Oil Order



OPEC survived the recent Middle East crisis, but the road ahead is still tortuous

Jahangir Amuzegar

With the outbreak of hostilities between Iraq and Kuwait in August 1990, some 4.5 million barrels a day (mb/d) of crude oil were withdrawn from the market, and the world's fragile oil balance was threatened for the third time in less than two decades. Coming on the heels of a tenuous ceasefire between Iran and Iraq, the new turmoil threatened the survival of the Organization of Petroleum Exporting Countries (OPEC) and raised questions about the organization's ability to function in the aftermath of a crisis involving four of its five founding members. Suggestions were made by OPEC's opponents to put the organization once and for all out of business. Strategies included trying to convince Saudi Arabia to leave the cartel, encouraging non-Mideast members to withdraw from the organization, and asking the US Congress to impose a tariff on imported oil.

As it turned out, OPEC managed to survive the internecine war and rebuff the new threats to its existence. But it must still contend with some of the internal frictions and many of the external challenges that the group faced before August 1990. It must also deal with the problems that continue to unsettle the global oil market—supply security for the oil importers, fair incomes for the producers, and price stability for all—under the so-called "new oil order." This article looks at the characteristics of this new order against the background of the latest oil crisis and examines the role that OPEC can be expected to play.

The third oil crisis

The turn of events began in the first quarter of 1990, when OPEC was producing an eight-year high of about 24 mb/d against its own self-imposed ceiling of 22 mb/d. The excess supply put strong downward pressure on world oil prices and threatened postwar reconstruction efforts in the area. By June, the price of OPEC crude had fallen to $14 a barrel from around $18–$20 a barrel at the beginning of the year, with two small members of the Gulf Cooperation Council taking most of the blame. To deal with quota violations and to ward off the threat of a possible military conflict, a new accord was reached in late July 1990 among all 13 OPEC members. It called for an output ceiling of 22.5 mb/d and a target price of $21 a barrel (up from $18). Although the new target was much higher than the $14–$15.5 a barrel prevailing in the world market, it was, in real terms, still the lowest since 1972.

Nevertheless, war erupted for reasons that had very little to do with quotas or prices, as oil prices were already on the way to recovery. Suddenly, OPEC was faced with a different dilemma: how to avoid a repetition of the 1973–74 and 1979–80 experiences, when an oil price explosion was followed by falling demand and plummeting prices. After a few days of intense consultations, the group decided in late August to suspend output quotas and authorize members to pump all the crude they could. Even so, the benchmark oil price in New York shot up to more than $41 a barrel in early October, largely reflecting a fear of potential supply disruptions rather than an actual crunch. OPEC itself (without Kuwait and Iraq) had 3–3.5 mb/d of excess capacity, which was tapped almost immediately. Moreover, total stockpiles of major consuming countries were at an eight-year high,

equal to nearly 100 days of consumption.

Early in 1991, the oil market did another dramatic turnaround. With increased OPEC production and the psychologically effective decision by the International Energy Agency to release as much as 2.5 mb/d from strategic reserves if necessary, a new glut developed. Crude prices collapsed to the pre-crisis level for the OPEC basket in early February 1991. For the third time in 18 years, a less than 9 percent drop in world oil supply had resulted in a more than 200 percent rise in the oil price within 60 days, followed by a drop of 52 percent in half a year. Oil price volatility thus remained a fact of life, prompting a new chorus of demand for price stabilization.

The "new oil order"

The oil market that OPEC has faced since the war is shaped by five major developments: (1) a new set of relationships among OPEC members, and between them and non-OPEC producers; (2) a trend toward convergence on oil price strategy within the cartel; (3) the search for new ways to ensure production discipline; (4) a tendency toward fresh accommodations between national oil companies and the multinational oil concerns—the "oil majors;" and (5) renewed calls for a producer/consumer "dialogue."

New internal and external coalitions. OPEC's new relationships are reflected in its internal power balance, as well as its external arrangements. Internally, the nearly successful bid by Iraq to alter the organization's leadership has now been decisively rebuffed. Saudi Arabia has once again become the most influential producer and exporter of crude within OPEC. After six years of renouncing its role as a swing producer, the kingdom may again be obliged to play that role to save the organization's solidarity. Iraq and Kuwait have lost their previous market shares for the time being and face an uncertain future in terms of both output and sales. And Iran has once again become a strong power broker and an active team player. Externally, the Russian Federation and other oil-producing states of the former USSR, along with members of the Independent Petroleum Exporting Countries (China, Egypt, Malaysia, Mexico, Norway, Oman, and Yemen), have been in regular contact with OPEC members and have shown a growing interest in cooperating with them on matters of mutual concern.

At the same time, a greater resolve has emerged within OPEC to cooperate more, as evidenced by reactions to wartime demands. Faced with a United Nations embargo on Iraqi oil shipments and Kuwait's almost total incapacitation—a situation that every OPEC member could have taken advantage of—the organization's delicate cohesion was not breached. Both Venezuela and Saudi Arabia, which were urged by the international community to use their excess capacity to make up for the oil shortage, increased their offtake, but only within the framework of OPEC's August 1990 resolution. Another example is Saudi Arabia's uncharacteristic decision in mid-1992 not to propose or press for a higher OPEC output ceiling, despite rising demand for OPEC oil and new pressures on oil prices. This apparent shift from the kingdom's traditionally restrained price stance is widely interpreted as a gesture of cooperation with other members.

A greater desire within OPEC for price moderation. Stung by the downward trend in real oil prices since 1973 and chastened by the wartime price seesaw, an overwhelming majority of OPEC members now seem to favor keeping the reference price at a reachable level. This means a price target high enough to attract investment in oil exploration and to give members needed revenues, but not high enough to cut oil's share in the global energy supply or to reduce OPEC's share in the world petroleum market. Even if one argues that OPEC emerged from the war no less fractious than before, the very fact that it is now dominated by a country with large reserves must ultimately favor more moderate and more stable prices. Also working in this direction is the producers' growing interest in "downstream" operations (e.g., refining and marketing). The "integrationists" may no longer be interested in merely raising short-term crude prices at the expense of refiners and distributors, if they can gain more in the long run by maximizing profits at the gas pumps and other final outlets.

Stronger enforcement of production discipline. Strict observance of output quotas has nearly always eluded OPEC members and may continue to be a contentious issue in the future, although there are signs that greater efforts are being made to stick to what has been agreed. Mindful of the acrimony that preceded the war, members seem determined not to repeat the mistakes of the past, and indications are that they have so far observed their informal pledge not to raise output. Indeed, the firming up of oil prices in the second quarter of 1992 shows that members have been careful to keep total production not much beyond OPEC's ceiling. Even so, it is too early to conclude that production discipline will no longer be a problem, as quotas were suspended after the outbreak of hostilities and not reinstated until mid-1992.

A greater willingness to accommodate the "majors." With the average real price of world crude expected to remain at best in the $21–$27 a barrel range for the rest of this decade and the increasing need for larger revenues by all OPEC members, oil exporters have realized that the only way to enhance their incomes is to sell more oil. This will mean investing in new capacity to boost output by at least 7–8 mb/d, as current excess capacity will probably be wiped out in two to three years. OPEC's "upstream" investment needs in the next five to seven years are estimated to cost up to $80 billion—not an easy sum to raise in these days of global capital shortages.

Prompted in large part by the desire for external capital and up-to-date technology, many OPEC members have begun to woo the same foreign oil companies that they ousted in the early 1970s—a move that some western analysts refer to as *de facto* denationalization. For example, Algeria has offered several oil and gas exploration blocks for international bids. Iran has signed an exploration and production agreement with a Japanese oil concern, Japex, for offshore drilling in the Persian Gulf. Venezuela, eager to increase capacity by 1 mb/d in five years, has awarded oil development contracts to a number of foreign companies and has signed a production-sharing agreement with Ashland Oil. Nigeria is allow-

ing British Petroleum to resume its oil search.

But the new arrangements with the oil majors—which the oil exporting countries insist on calling mutually rewarding "joint ventures," and which are fundamentally different from the old "concessions"—go beyond a mere access to capital. They involve secure export outlets, predictable buy-back prices, and regulated marketing. And although oil and nationalization are still closely linked in many of the countries, the stigma attached to foreign joint ventures is not as strongly felt as before. The majors also have something to gain. For them, it is a chance to obtain guaranteed sources of long-term supplies at prearranged prices.

Renewed demands for a consumer/producer "dialogue." The advocates of such a dialogue want OPEC and OECD governments to make oil price stability the cornerstone of an international energy policy. They also believe that producers and consumers should work together toward (1) rational capacity expansion to cushion sudden rises in demand; (2) environmental protection through joint research; and (3) efficiency optimization through the transfer and spread of technology. And they insist that the objective is to put an end to the post-1973 boom-and-bust cycles—not to fix prices.

This idea, which was first put forward by OPEC in the mid-1970s, now seems to be resurfacing with a more sophisticated agenda and new supporters. France hosted a consumer/producer conference in June 1991 and Norway held a similar session in July 1992. But to date—not surprisingly—the idea has not found favor with the major oil importing countries, and it has not managed to gain many converts among strict free enterprisers.

Tests to come . . .

So far, OPEC has been able to successfully deal with the latest oil crisis. It has managed to maintain internal cohesion among its members, despite the war and its aftermath; it has enforced output discipline more effectively than in the past, albeit in a firm market; and it has helped crude prices climb gradually toward the organization's target. Moreover, new developments since the war seem to have strengthened the group and created a climate where OPEC may be expected to be a more assertive, although more cautious, player. But whether it can play such a role depends on a number of factors, of which a favorable global oil balance and the organization's internal solidarity are the most significant.

Projections by oil analysts for world petroleum demand during the rest of this decade vary widely, largely because of different assumptions about global economic growth, energy efficiency, and the substitutability of various energy sources. Demand for OPEC oil is further predicated upon oil supplies from non-OPEC sources (particularly the level of net exports from the states of the former USSR).

At this stage, OPEC forecasters expect world gross product outside the former centrally planned economies to grow at an average annual rate of 2.7 percent from 1990–2000, and world oil demand, at 1.1 percent, raising world consumption by nearly 6 mb/d over the ten-year period. With oil output in the United States and Western Europe already on the decline, and oil production in other non-OPEC suppliers expected to remain unchanged, this would mean calling upon OPEC for an extra 7 mb/d by the end of this century. To meet this call, the organization would have to expand its sustainable output capacity to some 32 mb/d from the current 27.5 mb/d. By the end of the decade, the average oil price (in 1990 dollars) would be expected to reach $27 a barrel.

Under these assumptions, OPEC's growing leverage, if not dominance, in the world petroleum market may be expected. And, despite a minority view to the contrary among OPEC watchers, such an OPEC-friendly scenario could unfold, for the following reasons:

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• A price drop into the low teens or below would be harmful for some western oil producing countries with high oil costs per barrel. For them, a low oil price is a double-edged sword: It stimulates growth, lowers inflation, and improves the balance of payments; but it also is likely to spur demand, stifle conservation, disadvantage the domestic oil industry, and increase dependence on imports.

• Several non-OPEC oil-producing countries (notably Norway and Mexico) have shown an increasingly cooperative attitude, willing to cut production to help bolster prices.

• The environmentalist movement, which was expected to undermine OPEC by spearheading a drive away from oil toward "cleaner" sources of energy, may also, ironically, end up working to OPEC's advantage. With coal and nuclear energy considered environmentally inferior to oil, and the methane emission of gas now judged to be worse than carbon dioxide, a more cleanly refined oil may not be looked at unfavorably. Besides, environmentalists hold that the social cost of ecological damage from hydrocarbon use (air pollution, global warming, and the "greenhouse effect") must be included in the price of oil at the retail level. Such a "full-cost pricing" of energy (as discussed in the UN Conference on Environment and Development's "Agenda 21" in Rio de Janeiro in June 1992) clearly rules out a very low price for oil.

To be sure, the forecast of higher oil prices in the mid- to late-1990s will be highly sensitive to such developments as a new move in the OECD countries and elsewhere to reduce oil consumption (e.g., the European Community's proposed "carbon tax" on gasoline); greater energy efficiency; and unexpected new supplies from non-OPEC sources (particularly some of the states of the former USSR). Any substantial decline in the demand for OPEC oil would undoubtedly be a blow to the group's influence and clout. By contrast, any rapprochement between producers and consumers would enhance OPEC's prestige and power.

The issues of internal cohesion and external cooperation are thornier and less predictable. While the lingering conflict over long-term price strategy seems to have lost its significance for the time being, other internal differences remain unresolved. For example, members that invested heavily in new capacity have been resisting giving up their large market shares and will probably insist on establishing a new quota formula based on production capacity (or average daily output) instead of the July 1990 arrangement. At the same time, members in a financial crunch believe the largest exporter should absorb most of the brunt of any future output adjustment. Should Kuwait and Iraq resume their full prewar output before the world demand for OPEC oil reaches 26–27 mb/d, quota allocations would be a nightmare.

On the external side, coordinating production and exports with non-OPEC exporters will be a complicated task. And establishing a regular producer/consumer dialogue—much less an understanding or an accord—will be nothing short of a diplomatic breakthrough. It remains to be seen if the group's recent experience will enable it to achieve much beyond mere survival. ■

What is "Policy Switching"?

A new approach to understanding how people behave during an economic crisis and how they prepare themselves in anticipation of discrete policy changes

Robert P. Flood

Changes in economic conditions and policies create challenges for policymakers implementing the changes, for ordinary citizens and businesses who have to cope with the changes, and for researchers attempting to model and explain behavior after-the-fact. The policymakers and ordinary citizens, of course, somehow adjust to periods of change, but researchers face a different situation. Too often, historical data around a period of reform or policy change seem to look "peculiar" and are pushed aside or treated superficially, with the analysis focusing on activity during "normal times." This is unfortunate, because people behave in surprising and revealing ways during periods of crisis and policy change.

Recently, a wave of literature termed policy switching has attempted to understand that behavior by studying the effects of discrete changes in economic policy and the preparations people make in anticipation of these changes. Combining the entire experience—economic behavior in times of rapid change with behavior during more normal times—gives rise to powerful predictions and insights about patterns of economic organization. One branch of the policy-switching literature concentrates on private adjustments to discrete changes in government policy; another branch concentrates on discrete shifts in private behavior, such as opening a new plant or abandoning a production process. This article will examine private responses to policy switching by the government, with a brief look at switching in the private sector.

Policy switching by government

To introduce the idea of policy switching, let us take a hypothetical example. Suppose that during an election year two political parties, the Liberals and the Conservatives, differ on the need to impose a one-time capital levy—a tax on capital already in place; the Liberals favor the tax and the Conservatives oppose it. Public opinion polls give investors information about the parties' prospects and thus about the probability that a capital levy will be imposed in the future. When the polls show the Conservatives in the lead, investors bid up the price of existing capital; conversely, when the Liberals move ahead, capital prices drop. These price movements, which may be quite substantial, would not reflect changes in the current income stream to capital but would reflect possible changes in future after-tax returns.

To a researcher attempting to explain asset prices using actual income streams, such election-year price movements present a problem—typically, asset prices would be too volatile, based on the variability of current income from the asset. In the past, researchers dealt with similar problems either by dropping the atypical data or by creating a variable designed to account for this behavior. The policy switching way of handling this is to delve into the impact of the prospective policy switch on individuals who are pricing the assets and incorporate explicitly the changing beliefs about future income prospects into the evaluation of asset prices.

In this example, the size of the proposed capital levy and the opinion poll results would be treated as variables fundamental to asset pricing. Movements in these variables, which result in movements in asset prices, would help to reveal structural aspects of the asset-pricing process. This policy-switching approach to understanding the asset market allows the researcher to use periods of possible extraordinary volatility to refine our understanding of the normal working of markets.

We examine below three government policies studied in the recent policy-switching literature that involve discrete shifts in some aspect of policy: (1) monetary policy reform at the end of a hyperinflation, (2) an exchange-rate crisis culminating in a devaluation, and (3) establishment of an exchange rate target zone. These cases emphasize the key role of the private sector in pursuing profit opportunities in the face of uncertain government policy actions. The pursuit of profit—the basic motivation in most of economics—is the organizing principle of the policy-switching approach. Individuals who most accurately anticipate government actions will profit and market prices will reflect those anticipations.

Monetary policy reform. Let us consider how policy switching methods can be applied to understand monetary behavior in the final months of the German hyperinflation in the early 1920s. During this period, inflation was out of control, reaching over 500 percent a week in October 1923. In his classic hyperinflation study, "The Monetary Dynamics of Hyperinflation," Philip Cagan deleted the last four months of the German experience. This omission apparently reflected the fact that those final months had high inflation and relatively high real money holdings, contradicting his theory that real money balances should fall in response to an acceleration of inflation. Discarding such data was unfortunate, as it was the final months that contained the largest variations in data in terms of the most extreme inflation rates. It is, therefore, these final months that may also have revealed economic behavior most clearly.

Cagan's topic was revisited in 1980 by Peter Garber and this author when we attempted to include the final months of the German hyperinflation to study systemati-

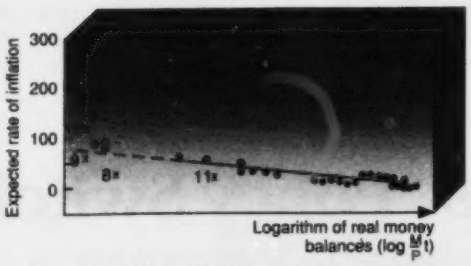
cally the entire experience (see Robert Flood and Peter Garber, "An Economic Theory of Monetary Reform," *Journal of Political Economy*, Vol. 88, No. 1, February 1980). In the policy change that we modeled, German authorities switched from their policy stance of high-inflation runaway money supply growth to a stable-price money supply policy. In the months just before the reform, the German people knew the inflation had to end soon because it was wrecking their country, but they could not be sure exactly when. Nonetheless, during the final months of the inflation, people thought there was a good chance things would soon be stabilized, and their inflation anticipations incorporated the possibility of a stabilizing reform.

It is reasonable to compare the situation of the German people to the passengers in a speeding car. The passengers may expect the driver to begin braking at any moment, and if they had to forecast the car's speed over an interval, their forecast would incorporate the effects of the expected braking. The German people expected the inflation brakes to be put on. They realized that the German economy simply could not continue to support the inflation and they began bracing themselves for a panic stop during the last few months of 1923. Naturally, the bracing took place a bit before the panic stop itself, and it was that bracing that gave Cagan so much trouble in his study.

The accuracy of inflation predictions during such periods are crucially important for profit estimates on contracts denominated in nominal terms. Someone who forecasts inflation more accurately than others will profit. Therefore, during a period when monetary reform is likely, the best inflation forecasts will incorporate the possibility of monetary reform.

We proposed and implemented a procedure for how people living through the German hyperinflation might have estimated the chances of monetary reform and how they might have revised their inflation forecasts in light of these estimates. The results of our effort are portrayed in Chart 1. Cagan's model of hyperinflation is based on a negatively sloping linear relationship between expected inflation and the logarithm of real money balances—money divided by the price level. The dots in the figure represent the data Cagan actually used in his study and the solid straight line is Cagan's model of money demand. Cagan dropped the hyperinflation's final four months (August, September, October, and November of 1923), which are shown as asterisks labeled with the month number. The points in the figure marked with an "x" and labeled with a month number represent Cagan's data points revised by policy-switching considerations. To make these revisions, we developed a theory of when a hyperinflating economy would reform its currency. Our revisions to Cagan's data adjusted his expected inflation numbers to allow for the possibility that a monetary reform would take place during the next month. Almost all of the adjusted points lie close to the extended portion of Cagan's fitted line (dashed line in the figure). Most dramatic is the revision of the expected rate of inflation for November 1923. Before accounting for policy switching, this point was far off Cagan's model of money demand, while after revision it fits well with the other data.

Chart 1
Effect of policy switching



Source: Robert Flood and Peter M. Garber, "An Economic Theory of Monetary Reform," *Journal of Political Economy*, Vol. 88, No.1, February 1980.

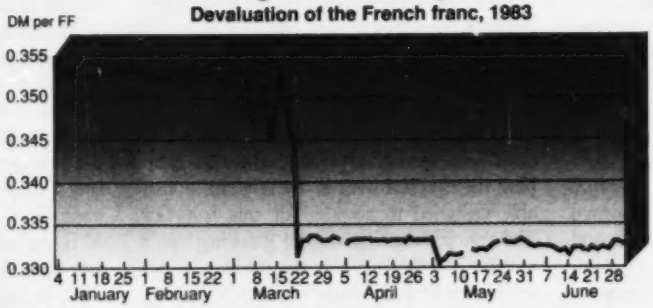
An exchange rate crisis. When a country tries to control its exchange rate, while at the same time following other policies or facing other conditions that are inconsistent with the announced exchange-rate policy, it can precipitate an exchange rate crisis. This situation sets up potential, almost risk-free profits for speculators at the expense of the exchange authority and requires the private sector to rethink its nominal contracting to account for the possibility of an exchange rate crisis.

To illustrate, let us examine French efforts in the early 1980s to peg the French franc to the German deutsche mark (DM). In the days prior to the devaluation of the French franc, which took place on Monday, March 21, 1983, franc interest rates leaped to seldom-seen heights. The two-day annualized franc rate reached over 350 percent a year during the week before the devaluation (see Chart 2)!

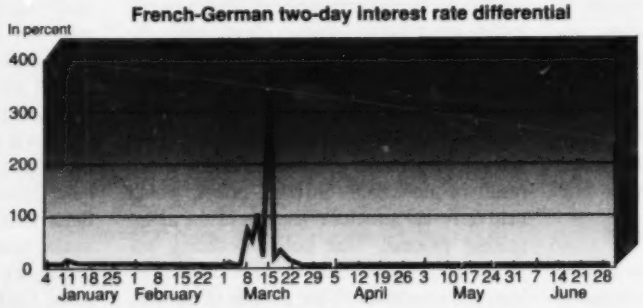
This leap in French interest rates caused a huge interest differential that is consistent with a policy-switching model. The 1983 devaluation of 3.75 percent against the DM, which took place over a two-day weekend, resulted in a yield of 675 percent at an annual rate to someone borrowing francs on the Friday before the devaluation, converting them to DM over the weekend, and repaying the franc loan with depreciated currency.

In 1983, foreign-exchange market signals strongly suggested an impending devaluation as expectation of an exchange rate change intensified, even though no one in the market knew precisely when, or by how much, the franc would be devalued. If foreign exchange traders attached, for example, a 50 percent probability to devaluation over a given weekend, then those traders would insist on an interest rate over the weekend that would at least compensate them for holding a franc

Chart 2
Accounting for an exchange-rate crisis
Devaluation of the French franc, 1983



French-German two-day interest rate differential



Source: *International Financial Statistics (IFS).*

position rather than a DM position. In the example, a 50 percent probability of devaluation and the expectation of a 3.75 percent devaluation would require a two-day interest rate in the neighborhood of 325 percent at an annual rate to compensate lenders of francs over the weekend, which is of the same order of magnitude as the interest rates observed.

An exchange rate target zone. In the previous examples, we approached policy switching as a onetime event—once the policy is actually switched, the example ends. Most studies of policy switching during the early 1980s were modeled in this fashion because analysis of repeated switches proved cumbersome. With repeated switches, the modeler has to cope with not just the probabilities of the first policy switch but of all future policy switches as well. This quickly becomes an analytical nightmare.

While studying exchange rate target zones, however, Paul Krugman noticed an elegant way to model simply and explicitly a situation of repeated policy switches. His technical innovation has led to over 100 research papers written in the last few years on the subject of exchange rate target zones. It is perhaps unfortunate that Krugman's innovation was displayed only in the area of exchange rate economics, for it has wide applicability. Academic exchange rate economics has been a disappointment because of its inability to develop a robust explanation of exchange rates in the modern flexible rate period. Therefore, as we study the Krugman example, our emphasis will be on the lessons learned from the approach to the policy switching problem rather than the specifics of the exchange rate application.

A government seeking to establish a central parity for the value of its currency relative to some other currency or currencies adopts an exchange rate target zone whereby it pledges to maintain the exchange rate within explicit margins. In the Exchange Rate Mechanism of the European Monetary System, for example, most member countries have announced the intention of maintaining the value of their currency within certain upper and lower limits—2.25 percent in either direction—around a central parity.

In a stylized version of a target zone, suppose that the foreign exchange authority intervenes in favor of the currency at the weak edge of the band and intervenes against the currency at the strong edge of the band. According to Krugman, speculators would recognize the foreign exchange authority's commitment to defend the zone at the zone edges. Knowing the trigger point and direction of official intervention in the foreign exchange market in some circumstances would be a profit opportunity for speculators possessing the information. But with the intervention information generally available, profits are competed away by speculators "lining up" and bidding against each other to accommodate the anticipated intervention at the most advantageous price to the foreign exchange authority. In Krugman's example, where the size of the intervention at the zone edges is anticipated correctly, the profits to speculators will be bid away entirely. This means that at the zone edges, intervention will have no effect on the exchange rate because the action of the authorities will be undone by the speculators.

We have just developed the now-famous "smooth pasting" result applied to the foreign exchange market. The lesson from the example is that speculators will bid away foreseen risk-free profit opportunities. In more realistic applications, government intervention is foreseen less perfectly and speculators will sometimes profit and sometimes take a loss.

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Some microeconomic directions

A parallel literature to that described above, which uses similar ideas, is tailored to describe private decisions that involve discrete changes in variables controlled by the private sector. But such decisions, like opening a new plant or abandoning a production activity are, in some ways, poorly modeled by traditional methods. For reasons not at all apparent in these models, unprofitable lines of production are kept operating far longer than predicted and the opening of new plants delayed longer than expected.

Models that incorporate a fixed cost of starting a new plant or production process have fared much better. These models allow researchers to describe the firm's investment policy using ideas similar to those developed for options-pricing models. For instance, consider a firm that has paid the fixed cost of entering a production line. Even if this product line is currently unprofitable, it is always possible that it will become profitable again in the future. By continuing to run the unprofitable process, perhaps on a diminished scale, the firm retains the option of restarting the production process later if conditions should improve. Thus, a firm's decision to shut down a process or a plant involves looking at the current price-cost margin and realizing that shutting down the activity means writing off the value of the restarting-option.

Final thoughts

The policy switching approach began as an academic undertaking designed to help investigators studying both microeconomic and macroeconomic data come to grips with the "peculiar" behavior that surrounds crises and other discrete events. The approach has turned out to be particularly worthwhile, allowing economists to combine economic behavior in times of crisis with behavior during more normal times. This permits the development of more reliable descriptions of behavior that may be useful to policymakers considering radical reforms. Studies of policy switching also remind us of the value of careful analysis of the historical record surrounding data. In each of the examples we looked at, correct analysis required a deeper understanding of the situation than would be available to a researcher looking only superficially at the data. ■

Suggestions for further reading

Thomas Sargent and Neil Wallace introduce many of these ideas in their paper, "The Stability of Monetary Models with Perfect Foresight," *Econometrica*, 41 (November 1973). Paul Krugman and Marcus Miller collect some of the early papers on exchange rate target zones in *Exchange Rate Targets and Currency Bands* (Cambridge University Press, 1992). In *Policy Switching*, forthcoming (The MIT Press), Peter Garber and Robert Flood cover many of the topics mentioned here and on related areas. Avinash Dixit gives a very readable version of his work on the private-sector parallel to policy switching in his paper "Investment and Hysteresis," *The Journal of Economics Perspectives*, Vol. 6 (Winter 1992).

The Fiscal Dimensions of Adjustment

How do we judge the overall fiscal performance of low-income countries that have undertaken adjustment?

Sanjeev Gupta and Karim Nashashibi

Fiscal adjustment—comprising both stabilization and structural reform—is at the core of most IMF-supported programs. But how have countries that have made sustained use of concessional IMF resources actually fared in meeting these dimensions of adjustment?

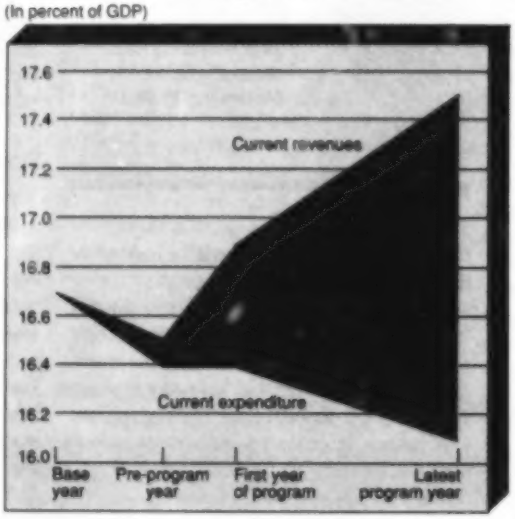
This is the focus of a recent IMF study that assessed fiscal developments in 23 low-income countries in Africa, Asia, and Latin America that implemented IMF-supported programs during 1986–91. The study contained two components. First, it compared the fiscal performance in the latest year of the program with (1) a base year (1984 or 1985, or an average of the two); and (2) one year prior to the program, which often coincided with a worsening of the economic situation. These comparisons provide a guide to the actual "adjustment effort." Second, it looked at structural reforms, which are meant to strengthen the institutional capability to undertake good economic management and mobilize public resources.

The results of the study show relatively small improvements in key fiscal indicators. But these fiscal developments should be interpreted with caution, because the structural changes—which lay the ground for better fiscal performance in the future—are not yet fully reflected in the quantitative measures.

Chart 1

Trends in average current balance

(In percent of GDP)



Sources: Data provided by the authorities; and IMF staff estimates.

Magnitude of fiscal adjustment

A key objective of all adjustment programs has been to strengthen public sector savings, with the twin aims of making additional domestic and foreign resources available to develop the private sector and supporting productive public investments (particularly in infrastructure and human capital). One way of measuring public sector saving is to examine the *current balance* of government operations—that is, the difference between total current revenue, excluding external grants, and current expenditure. However, caution must be exercised in using this concept of current balance because of the possibility of misclassification of expenditures.

For the countries studied, the current balance on average improved, but by less than expected. Compared with the base year and the pre-program year, this balance strengthened by around 1.3 percent of GDP (see Chart 1). Only about 20 percent of the countries improved their current balances by more than 2–3 percent of GDP at the end of the program compared with the pre-program year.

A measure of the overall net impact of fiscal policy on aggregate demand and of the absorption of foreign and private domestic savings by the government is the *overall balance* of government operations—that is, total revenue, excluding grants, minus total expenditure. The study showed evidence of some improvement, with the average overall budget deficit falling by around 1.1 percent relative to the base year and by 0.9 percent relative to the pre-program year.

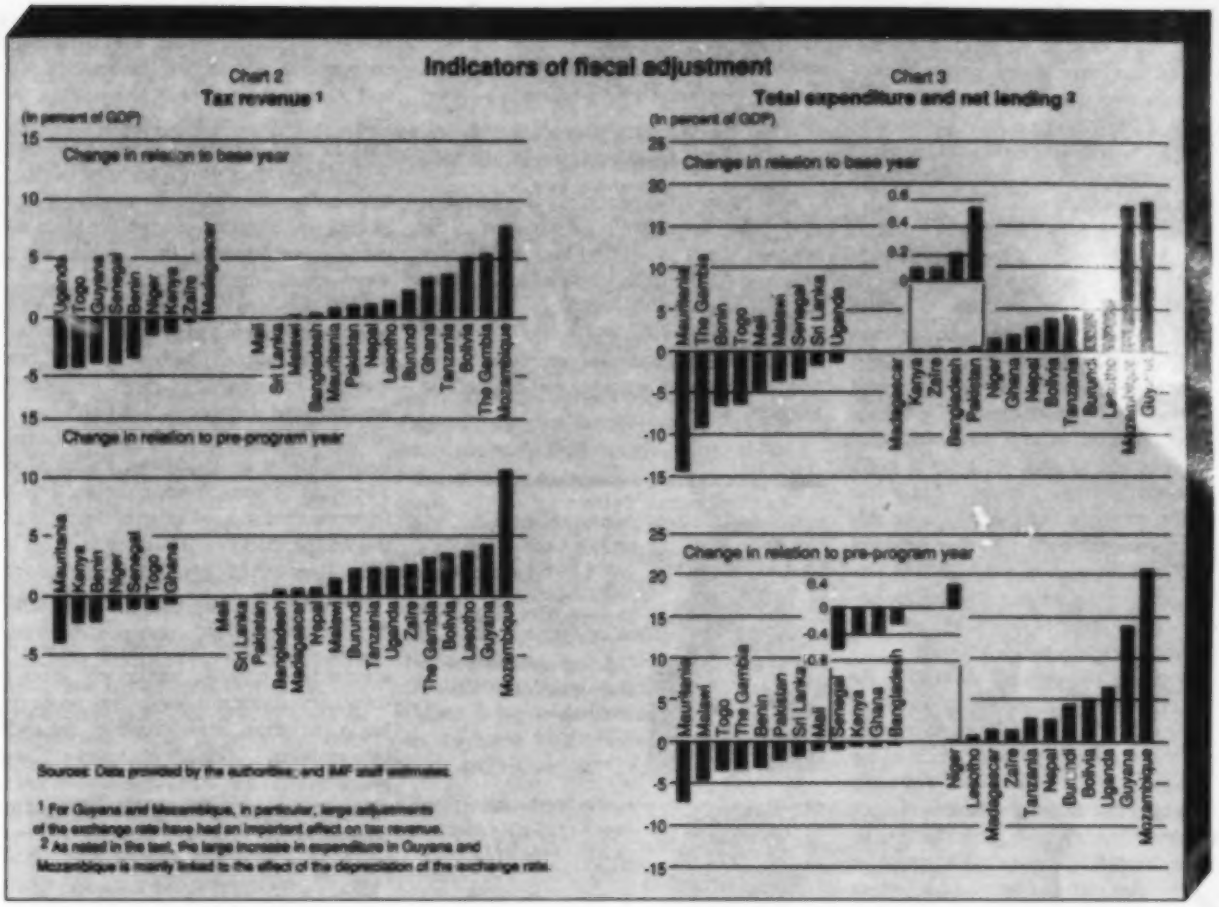
Sources of fiscal adjustment

How a government reduces the budget deficit and how it finances the overall deficit is just as important as the magnitude of the adjustment. A reduction in the fiscal deficit achieved through cutting investments for productive infrastructure or trimming expenditures on operations and maintenance, for example, may not be sustainable over time. It may even be counterproductive, if the cuts lead to a deterioration of infrastructure, education, and health.

In the sample studied, many countries reduced their deficits by both revenue-enhancing and expenditure cutting measures.

Revenue. More than half of the countries increased their ratio of tax revenue to GDP vis-à-vis the base or pre-program year (see Chart 2). The actual increase in tax revenue, however, fell short of the program objectives

This article is based on IMF Occasional Paper No. 95, "The Fiscal Dimensions of Adjustment in Low-Income Countries," by Karim Nashashibi, Sanjeev Gupta, Claire Liuksila, Henri Lorie, and Walter Mahler, available from IMF Publication Services, Washington, DC 20431, $15.


Indicators of fiscal adjustment
Chart 2
Tax revenue 1
(In percent of GDP)
Change in relation to base year
Change in relation to pre-program year
Chart 3
Total expenditure and net lending 2
(In percent of GDP)
Change in relation to base year
Change in relation to pre-program year
Sources: Data provided by the authorities; and IMF staff estimates.
1 For Guyana and Mozambique, in particular, large adjustments of the exchange rate have had an important effect on tax revenue.
2 As noted in the text, the large increase in expenditure in Guyana and Mozambique is mainly linked to the effect of the depreciation of the exchange rate.

in most countries, partly because of deficiencies in the design, implementation, and sequencing of tax structure and reform.

The tax ratio averaged 13.7 percent of GDP in the base year, declined to 13.4 percent in the pre-program year, and increased to 14.1 percent in the latest year of the program. This modest increase over the program period reflects in part the difficulty of raising the ratio of tax revenue during a period of deteriorating terms of trade and widespread efforts to reduce tariffs. The 12 countries that increased their tax ratio relative to the base year did so by an average of 2.8 percent. The increase exceeded 5 percent of GDP in Bolivia, The Gambia, and Mozambique, and more than 3 percent of GDP in Ghana and Tanzania. Relative to the pre-program year, only nine of the 23 countries succeeded in raising their tax ratio by 2 percent of GDP or more, suggesting that substantial increases in tax revenue take time.

Tax ratios increased significantly in countries that embarked on comprehensive reforms of their tax systems (for example, Bolivia and The Gambia) or implemented policies that reduced domestic distortions and realigned relative prices (Bolivia, Ghana, Mozambique, and Tanzania) by adopting a more realistic exchange rate and freeing some administered prices. The tax base shrank in most of the countries in Africa that peg their currency to the French franc (CFA franc zone), a reflection of the recessionary conditions induced by a sharp decline in terms of trade, combined with an appreciation of the real effective exchange rate, import liberalization, and tariff reform. Average revenue from nontax sources (e.g., interest, rent, profit, and dividends) also improved slightly, reflecting in part windfall gains on domestic sales of imported commodities and an increase in public utility rates.

Expenditure. Total expenditure remained virtually unchanged at around 25 percent of GDP during the program period. This underscores the difficulty of lowering the largest components of recurrent expenditure, such as wages and salaries, while attempting to enhance fixed capital formation (see Chart 3). Average capital expenditure remained steady at 8 percent of GDP during the program period. When comparing the latest program year with the pre-program year, about half of the countries increased their capital expenditure to GDP ratio with the aim of increasing productive investment. Of these, four countries (Bolivia, Ghana, Tanzania, and Uganda) started off with very low public investment ratios (2–4 percent of GDP), while other increases were quite modest. In some countries, such as The Gambia, Sri Lanka, and Togo, where capital spending was unusually high, a part of the fiscal adjustment was secured by weeding out unproductive investments. But in most cases, despite the objective of promoting growth through higher productive investments, capital expenditure was lower than programmed, enabling the overall deficit targets to be attained.

Current expenditure, on average, declined only marginally—from 16.4 percent of GDP in the pre-program year to 16.1 percent in the latest year of the program. Relative to the pre-program year, recurrent expenditure declined in 13 countries, with particularly large adjustments in Kenya, Lesotho, Malawi, and Mauritania. Of the ten countries that increased their recurrent expenditure,

Bangladesh, Nepal, and Uganda started off with very low levels (in the range of 6–8 percent) and may have moved toward a more sustainable level of recurrent expenditure. In the case of Mozambique and Sri Lanka, civil strife inflated military expenditure, while in other countries, there was a marked slippage in expenditure control.

As mentioned earlier, reductions in recurrent expenditure have proved difficult to achieve. Needs for health, education, maintenance of infrastructure, measures to protect the poor, and delivery of other public services for a rapidly growing population are increasing. Alternatively, government employment often tends to be excessive, and structural measures designed to curtail the growth of the civil service and to weed out areas of inefficiency are difficult to implement and take time to have effect. Only four countries were able to reduce recurrent outlays by over 2 percent of GDP in three to four years of IMF programs, with most of the cuts affecting maintenance and purchase of goods and services, rather than the size of the civil service.

Financing the overall deficit. In the pre-program period, a number of countries facing severe budget difficulties delayed payments to their suppliers and accumulated unpaid bills to cover expenditure. Financing data suggest that the fiscal adjustment helped to accelerate a reduction in these payment arrears, by about 0.5 percent of GDP compared with the base year and by about 1 percent with respect to the pre-program year. The proportion of the deficit financed through foreign sources rose to 8 percent of GDP from 6 percent during the program period. On its own, this increase is not an indication of rising dependence on foreign financing, because of significant exchange rate devaluations in many of the countries in the sample. However, estimates of foreign financing expressed in US dollars, comprising grants and loans (the latter adjusted for repayments), show that the average flow of foreign resources to each of these countries increased from an average of $165 million in the base year to $311 million in the latest program year.

Averages, however, conceal marked variation across countries. For instance, Bangladesh, Pakistan, and Zaire each received over $350 million more in the latest program year than in the base year. These resources helped finance an increasing proportion of total expenditure in the sample countries, from an average of 23 percent in the pre-program year to 31 percent in the latest program year. While this increase in external financing was not matched by higher public investment, it did help countries to undertake structural reforms and to resort less to inflationary borrowing from the banking system. The average financing from both bank and domestic nonbank sources fell by 2.8 percent of GDP relative to the base year, and by 2.2 percent vis-à-vis the pre-program year.

Structural reforms

Four major types of structural adjustment in the fiscal area have been promoted in the program countries: (1) reforms of the tax structure; (2) strengthened tax administration; (3) improvements in budgetary accounting and in the composition and control of expenditure; and (4) privatization of public enterprises and improvements in pricing and efficiency in those that remain.

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Tax system reform. In general, to broaden the tax base and to promote efficiency, the countries under review reduced their reliance on international trade taxes in favor of domestic taxes. Export duties on primary products, therefore, were reduced or eliminated in most countries, except for environmental considerations—a move that was also necessitated by the sharp fall in world commodity prices. In most programs, there were attempts to simplify the tariff structure, reduce exemptions, and make customs duties responsive to price changes. Thus, in many countries, the number—as well as the highest levels of import duty rates—were reduced, a minimum import duty imposed, duty exemptions reduced, and specific rates converted to an *ad valorem* basis.

Since these reforms tended to reduce revenue from taxes on international trade, the task of raising revenue and controlling luxury consumption was shifted to domestic sales and excise taxes (Kenya, Mauritania, and Senegal). This, however, proved to be more difficult than envisaged. While broad-based, general sales taxes were introduced in about a third of the countries in the sample, often replacing a multiplicity of sales tax rates, difficulties in implementing them yielded less tax revenue than originally estimated.

Some countries simplified and improved the equity and efficiency of personal income taxes by scaling down the highest marginal rates, lowering the number of rates, reducing exemptions and deductions, and tightening the coverage of fringe benefits (Bolivia, Guyana, Kenya, Madagascar, Malawi, Pakistan, and Tanzania). In some cases, however, these reforms resulted in a reduction in direct tax revenue in the short run (Madagascar). This has been rather unfortunate, because, on considerations of equity, the revenue from direct taxes should have increased.

Last, taxation of the informal sector has always been difficult, particularly under recessionary conditions when this sector has tended to grow. Some countries responded by imposing presumptive import taxes (Mauritania, Niger, and Togo), low excises on mass consumption commodities (Senegal and Mauritania), and by raising minimum license fees (Niger).

Tax administration reform. The reform of the tax system has been supported by stronger tax administration, including better training, salaries, and conditions of service of revenue collection personnel. Ghana improved the efficiency of its revenue collection by establishing a new revenue secretariat, with better salaries and special bonuses for meeting specified revenue targets. Benin, Bolivia, and Tanzania introduced special incentive schemes for revenue collectors. Uganda is establishing a well-paid revenue collection entity, separate from the civil service. In Kenya, to simplify the administration and rationalize the structure of the value-added tax, the number of rates was halved, while in Sri Lanka the penalty and appeals system was strengthened and a special unit set up for the largest payers of income and business turnover taxes.

Budgetary reform. Many countries have attempted to improve the transparency of budget accounts and extend the coverage of basic fiscal accounts to encompass most public activity. For instance, Ghana, Guyana, Tanzania, and Uganda reduced or eliminated the implicit subsidies resulting from undervalued interest rates or exchange rates. In other countries, special and extrabudgetary accounts have been consolidated into the gen-

eral fiscal accounts (Mali, Mauritania, and Senegal), and foreign financed project aid has been integrated into the general budget (Benin, Madagascar, and Mozambique). Some improvement in the composition of expenditure across and within major components was achieved, although the impact on the budget balance has tended to be modest.

A number of countries (The Gambia, Ghana, Lesotho, and Malawi) managed both to reduce the civil service wage bill as a percentage of GDP and to reform its structure. A few also made efforts to contain or reduce military expenditure and other forms of relatively unproductive expenditure (Mozambique and Pakistan), but little progress was achieved. In addition, countries have paid more attention to the design of measures to cushion the impact of economic adjustment on the poor (see "Poverty Concerns in Fund-Supported Programs" by the authors, in *Finance & Development*, September 1990).

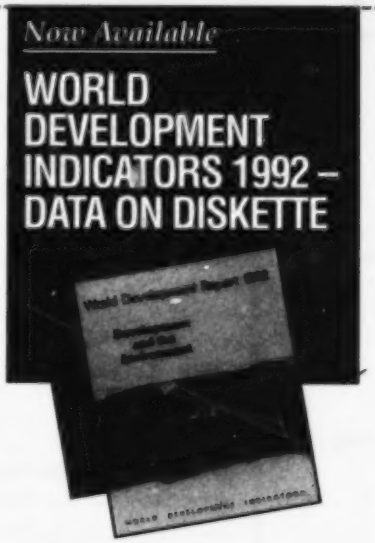
Public enterprise reform. A number of programs (Madagascar, Mali, Senegal, and Togo) sought a comprehensive reform of public enterprises. Plans were drawn up identifying enterprises to be liquidated, privatized, or rehabilitated. While progress has been achieved, almost all efforts at restructuring the public enterprises sector proceeded more slowly than initially planned. Substantial delays were encountered in the liquidation of nonviable public enterprises and also in attempts at privatization (Madagascar, Mali, Senegal, Sri Lanka, and Togo). This delay was due to the legal and technical complexity of such a process, weak administrative capacity, lack of credible private sector purchasers, and above all, weak political commitment.

Togo was one of the few countries to generate a significant amount of funds from privatization. Bolivia, by combining flexible pricing policies, privatization, and reductions in employment, was able to eliminate almost all budgetary transfers to public enterprises. For those enterprises that remained in the public sector, there was an effort to improve the quality of management by granting them some autonomy and providing incentives through a variety of performance contracts specifying clear objectives (The Gambia, Senegal, and Togo).

Efforts to improve the financial situation of existing public enterprises also focused on ensuring that appropriate pricing policies were in place. It proved to be more difficult, however, to devise mechanisms to improve efficiency and reduce costs. Excessive employment remained a common source of inefficiency, and cumbersome labor and price regulations impeded progress. Monopolistic marketing boards, which extracted an implicit import tax, were abolished in some countries (e.g., rice imports in Senegal and Togo). In others (Ghana, Kenya, and Tanzania) processing and exporting activities were handed over to the private sector, which was allowed a greater role in trading primary products and foodgrains. Attempts were also made to improve the accounting systems of public enterprises and to make their financial relations with the government and the banking system more transparent.

Conclusion

In sum, caution must be exercised in relying on a quantitative picture to judge the overall fiscal performance of countries undertaking sustained adjustment. The relatively small improvements in fiscal aggregates have to be viewed against the background of the significant strides made in restructuring the economies of these countries during the program period. These lasting achievements should provide the institutional basis for a much stronger fiscal performance and sustained economic growth in the future. ■



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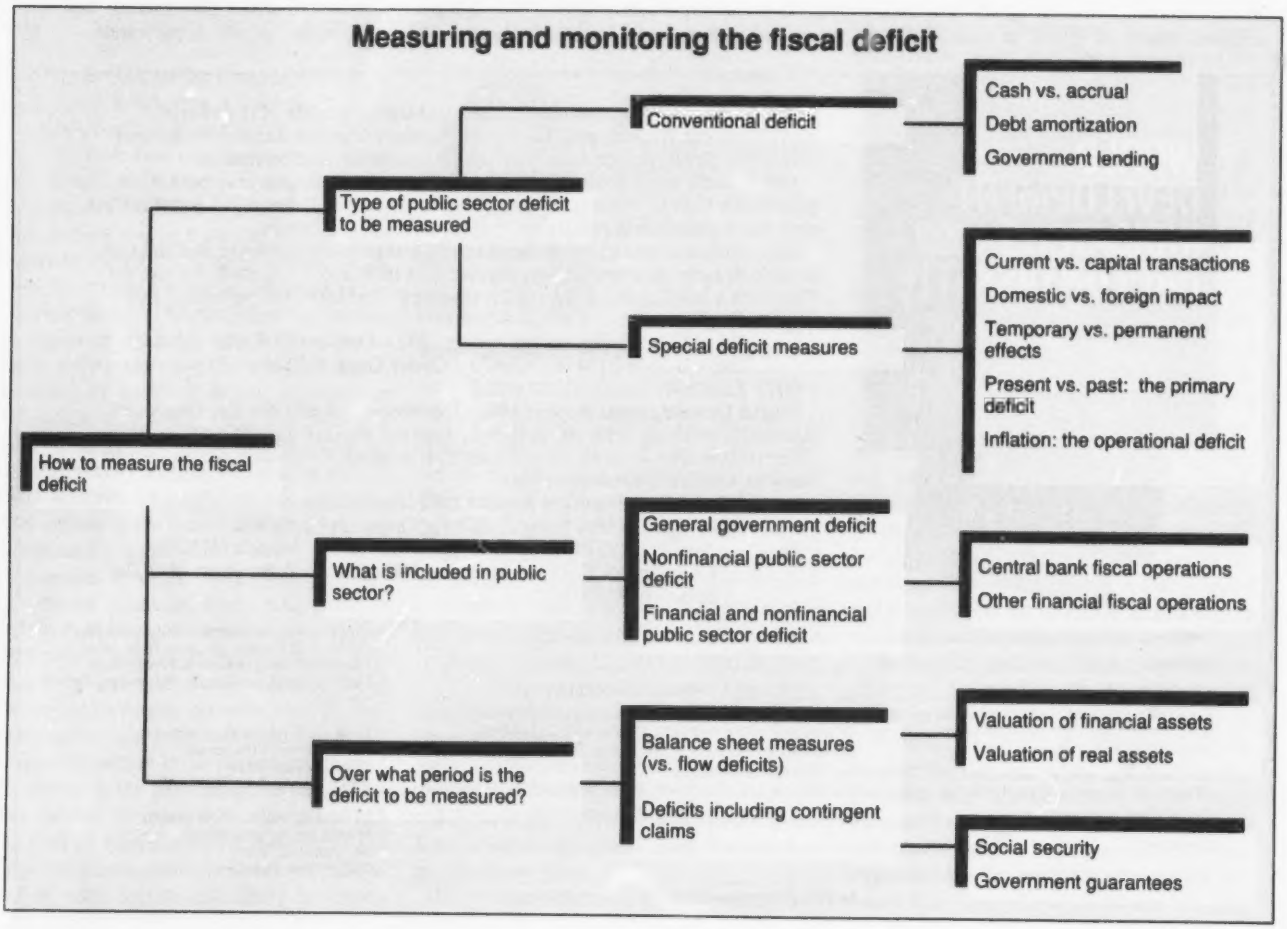
How to Measure the Fiscal Deficit

New thinking on alternative fiscal deficit measures

Mario I. Blejer and Adrienne Cheasty

A primary objective of fiscal policy is to balance the use of resources of the public and private sectors and, by so doing, to avoid inflation and balance of payments pressures. The correct measure of the public sector's net resource use—the fiscal deficit—is, therefore, an important prerequisite for macroeconomic management. But there is no such thing as a clear and perfect measure of the fiscal deficit. Rather, there exist a series of alternative measures—each with advantages and disadvantages. Each of the measures fulfills an important function, sometimes isolating very specific effects. For meaningful cross-country comparisons or useful general conclusions about fiscal policy, therefore, the differences in all of the alternatives have to be made explicit. This article explains the different measures, and attempts to give a sense of when each would most appropriately be used.

The fiscal deficit can be assessed using three gauges: (1) the type of deficit to be measured within a public sector coverage; (2) the coverage or size of the public sector and its composition; and (3) the relevant time horizon. The standard definition of the fiscal deficit is the so-called conventional deficit, which measures the difference between to-


Measuring and monitoring the fiscal deficit
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Type of public sector deficit to be measured
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Nonfinancial public sector deficit
Financial and nonfinancial public sector deficit
Central bank fiscal operations
Other financial fiscal operations
Over what period is the deficit to be measured?
Balance sheet measures (vs. flow deficits)
Deficits including contingent claims
Valuation of financial assets
Valuation of real assets
Social security
Government guarantees

tal government outlays and receipts, excluding changes in debt. When measured on a pure cash basis, the conventional deficit corresponds to the "public sector net borrowing requirement." It is, in general, more restrictive than the deficit measure implicit in laws requiring balanced budgets, which typically balance the budget by including the sale of government bonds as ordinary revenue (i.e., "above the line" that separates deficit-determining items from those that finance the deficit).

In practice, a completely cash deficit, based on government outlays for which cash has been disbursed during the 365-day period and actual cash revenues received, is used less often than a mixture of accrual and cash deficits. For example, interest payments are usually counted as outlays when they fall due, and revenues are measured at the time of collection. The "completely accrual deficit" attempts to capture the actual net resources to be used by the government during the fiscal year (i.e., the commitments of the public sector), regardless of whether or not the transactions have actually taken place. The treatment of fixed capital depreciation, a purely accrual item, is the most significant distinction between the cash and accrual deficits. The gap between the cash and accrual deficits also includes lags in cash payment that exceed a normal accounting period. These delays give rise to arrears, which may pose a problem in measuring the impact of the deficit on aggregate demand: arrears may have the same contractionary effect on the economy as an unmeasured tax on suppliers.

Special deficit measures

The deficit reported in statistical publications or the press is one of the versions of the conventional deficit discussed above. However, alternative indicators have been developed to measure the impact of government activity on specific aspects of the economy, as described below.

The "current deficit" is the conventional deficit less investment outlays and capital revenues (such as asset sales). This measure attempts to identify public saving. However, it has been criticized because the distinction between investment and current outlays is sometimes blurred.

The "domestic deficit" considers only those components of the conventional deficit that arise from transactions within the domestic economy and omits those affecting the balance of payments directly. This measure attempts to identify the direct expansionary impact of government on the local economy. For example, government expenditure on domestic goods that is financed by foreign grants, or revenue from oil exports (which does not cut other domestic absorption possibilities) gives rise to a domestic deficit and increases aggregate demand more than if these expenditures had been paid for by domestic taxes (without creating a domestic budgetary imbalance). The calculation of separate domestic and foreign deficits is particularly relevant to an assessment of the consequences of devaluation, which depends on the size of government imports and foreign debt service obligations.

While the budget deficit affects aggregate demand, the reverse is also true. Calculations of "full-employment and cyclically adjusted deficits" attempt to distinguish between changes in government revenue and expenditure associated with cyclical fluctuations in output and those changes that reflect discretionary policy decisions—the fiscal stance. These deficits broadly correspond to the conventional deficit recalculated using potential output rather than actual output (in the case of the full-employment deficit), or trend output (for the cyclically adjusted deficit). The usefulness of these indicators is limited, however, by difficulties in identifying potential and trend output, both of which are unobservable variables.

Interest payments on public debt are predetermined by the size of previous deficits. Their inclusion in the deficit indicator, therefore, does not permit the direct identification of the effect of current government policies on the economy. For this purpose, the "primary deficit" (i.e., excluding interest payments from the conventional deficit measure), has been widely used, particularly in debt-overhang countries. The measure cannot, however, fully identify the scope for government discretion, since entitlements (such as unemployment benefits) and the public sector wage bill may also be largely predetermined.

When inflation is high and nominal interest rates vary with inflation, a large share of interest payments represents amortization of public debt because it compensates bondholders for the erosion in the real value of their assets. The conventional deficit concept places amortization "below the line" on the argument that, unless the sustainable level of public debt has changed, it will be automatically rolled over and, hence, does not represent a new expenditure. In high-inflation countries, therefore, the implicit inflation-induced amortization is sometimes removed from the deficit calculation to avoid overestimating the true fiscal imbalance. The "operational deficit," which is the conventional deficit minus that part of the debt service that compensates debt holders for actual inflation, may be a closer approximation of the fiscal disequilibrium. One problem with this approach, however, is that the automatic rollover of the inflation component of interest payments cannot be guaranteed, because the sustainable level of public debt is not independent of a country's prospects and stabilization efforts.

Composition of the public sector

Government transactions relevant for measuring the impact of the fiscal deficit are sometimes carried out by nongovernmental agencies. Thus, the "general government deficit" (covering central, state, and local governments) must, in many cases, be expanded to encompass the operations of nonfinancial public enterprises (generating the "nonfinancial public sector deficit") and the quasi-fiscal operations of the public financial sector.

While the transactions of public enterprises are to some extent motivated by profit, their prices—and sometimes sales—may often be determined by government policy, and may have a fiscal impact. In order to identify the government's influence, two issues concerning public enterprises must be explored: first, identifying enterprises that are to comprise the public sector and, second, measuring their fiscal implications. In classifying firms as public, ownership is not a sufficient criterion: their behavior (their response to market signals) and their impact on public finances (through a soft budget constraint) are both important. Once enterprises have been defined as "public," their fiscal impact derives, not from their sales and outlays—which may be considered comparable to the transactions of private firms—but only from whatever implicit taxes and subsidies are embodied in their prices and reflected in their profits and losses. As a proxy for isolation of the policy (tax or subsidy) element in public enterprise net profits, the operational balance of public enterprises may be added to the general government balance (along with investment by the public enterprise sector), because it is usually considered to derive principally from public policy decisions.

In many countries, important quasi-fiscal activities are carried out by financial entities in the public sector, including the central bank, as well as by other publicly owned

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This paper is based on a survey by the authors: "Measuring the Fiscal Deficit: Analytical and Methodological Issues," Journal of Economic Literature, December 1991. *The issues discussed are treated more extensively in a collection of IMF papers edited by the authors:* How to Measure the Fiscal Deficit: Analytical and Methodological Issues, 1992.

financial intermediaries. These activities include managing explicit subsidies, maintaining multiple exchange rate regimes, debt service, transfers, preferential credit, bailing out ailing industries, and so on. All of these may act as a drain on public resources and should be included in a comprehensive measure of the public sector balance. In practice, however, it is difficult to separate monetary from quasi-fiscal activities.

The central bank's quasi-fiscal operations are automatically and correctly included in the fiscal balance when (1) the central bank makes a profit, which is all transferred to the government and, (2) all quasi-fiscal activities are reflected in the profit-and-loss account. Adjustments to the deficit must be made, however, when the central bank makes losses (because these are often not covered by transfers from the budget), and when quasi-fiscal activities affect only the composition of its assets (lending to meet the government's objectives, for example).

Other public financial institutions may also operate in the capital market under special conditions, such as under government guarantees, while benefiting from implicit monopoly over segments of the market. A large share of their assets may be preferential credits and, therefore, analogous to budgetary lending programs. Hence, it could be argued that, like government direct lending, all of the directed lending of public banks should be added to the deficit. In practice, however, such a procedure would overstate the deficit because much of the financing for these loans arises from other parts of the public sector. To prevent doublecounting, therefore, only the portion of public banks' lending that is directly financed by the domestic capital market or from abroad should be treated the same as government lending.

The time dimension

The measures discussed thus far are used to calculate the annual fiscal deficit. However, recent changes in the world economic environment have led economists to question the relevance of the annual deficit, including its use of an artificial annual cutoff point, and its reliability as an indicator of governments' ability to pay. The issue of long-run government solvency has been highlighted by the debt crisis, and privatization programs have focused attention on the consequences of financing current expenditures by the sale of assets. At the same time, large swings in exchange rates and domestic price levels have shown that a government's financial position can be affected by price and valuation changes.

Annual deficits are now seen to have three important shortcomings. First, conventional yearly deficit measures often include receipts from privatization and the sale of other assets (such as embassies or aircrafts) as revenues. Because these sales provide immediate cash, the annual deficit does not show that the government is actually worse off because of the replacement cost of these assets. Moreover, the reduced deficit overstates the sustainability of the government's policy stance. Second, the annual fiscal balance includes both revenues that will be offset by future expenditures, such as social security contributions, and expenditures in payment of obligations or entitlements contracted in previous fiscal years. Government guarantees also do not appear in the annual balance, although they may lead to future large lump sum outlays. Third, the conventional deficit does not reflect valuation changes in government assets and liabilities, although the government's ability to pay will certainly be affected by inflation, devaluation, changes in terms of trade or relative prices, and real capital gains or losses on government claims and debts.

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Recent analyses of the deficit have centered on attempts to assess the biases in the information given to policymakers that are caused by the shortcomings listed above, and on the development of measures that take the public sector's budget constraint into account in describing governments' ability to pay. There is now an academic consensus, at least, that an accurate assessment of sustainability would require the replacement of the annual deficit with a measure of changes in government net worth (i.e., the change in the government balance sheet from year to year). Tentative government balance sheets have been compiled, and, in particular, several crucial advances are being made toward an improved intertemporal deficit measure. However, each attempt to go from a pure flow deficit to a stock-based deficit measure remains subject to analytical criticisms, besides being much more difficult to calculate.

First, attempts are being made to revalue government financial assets and liabilities by adjusting them for the inflation-induced erosion in their real value, and to reflect their market rather than face value. The relevance of the latter adjustment has, however, been questioned, since government debt is practically always redeemed at face value. Second, estimates of the value of government real assets, such as land and mineral rights, have been prepared, and attempts have been made to calculate the government's net investment via the application of economic depreciation schemes. The valuation of real assets is complicated because their prices would be very different from at present, were all public assets put on the market. Third, the potential impact of contingent claims on government, such as the cost of social security programs, loan guarantees, and so on, can be estimated through an actuarial assessment of the expected present value of the programs; their present value would then represent a government asset (or liability). However, any such actuarial computation depends on the estimation of probabilities—which may be widely disputed. Moreover, actuarial insurance assessments are more difficult to make in the public sector than elsewhere because the government is less likely to charge insurance premia and typically does not set up appropriate reserves to offset its accumulation of risks.

While these adjustments correct for some serious problems in the assessment of the impact of fiscal policy, it is clear that many measurement questions remain to be resolved before net worth concepts of the public sector deficit could become operational. The point has also been made by theorists that even if generally accepted solutions were arrived at for the issues listed above, measures of the government balance sheet would remain subject to indeterminacy because of the government's ability to levy taxes. Since the government may be able to tax away all private sector net worth, a deficit defined as the change in public sector net worth may never be satisfactorily measurable. Hence, annual deficit measures are not likely to be replaced, but only supplemented in cases where government solvency is seen as a particularly important policy problem. ■

Economic Adjustment and Private Investment

How has private investment fared in the last decade? Findings from recent research

Luis Serven and Andrés Solimano
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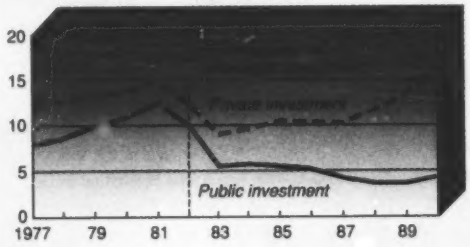
A decade ago, the debt crisis and the global shocks affecting developing countries set off a protracted period of macroeconomic instability and a drop in external financing that precipitated a drastic decline in investment. This decline, which was especially sharp in the highly indebted countries, has been accompanied by slowed growth in developing countries. If this trend continues, it will endanger the sustainability of adjustment efforts in the developing world.

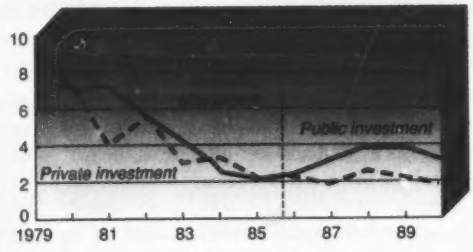
The resumption of growth will require a robust response of investment to macroeconomic adjustment and reform—particularly by the private sector, which is expected to play a key role in market-oriented reforms. But since the outbreak of the debt crisis in 1982, both public and private investment in developing countries have slowed sharply, remaining depressed throughout the decade. Although private investment did show signs of recovery beginning in 1987, public investment rates have continued to decline. Indeed, in 1989, the average ratio of public investment to GDP was almost three points below its level of the 1970s.

Private investment responds to economic adjustment in Mexico

(In percent of GDP)



.... but fails to respond to Bolivia's liberalization and stabilization programs



Source: The World Bank.

Even in countries that made substantial progress in correcting macroeconomic imbalances and restoring profitability (e.g., Bolivia, Ghana, and Mexico in the mid 1980s), the recovery of private investment has been slow and weak, often lagging adjustment measures by more than five years. In turn, the continuing decline of public investment has led to a contraction in public infrastructure expenditures, which has had adverse implications for both medium-term growth and private capital accumulation, given the complementary relationship between private and public infrastructure investment.

This disappointing trend in private investment has become a major source of concern, prompting academics and policymakers to examine the reasons for it and to suggest policies to stimulate investment. Adjustment policies typically involve fiscal and monetary restraint and real currency depreciation, as well as foreign trade and financial market liberalization and the removal of microeconomic distortions. Until recently, however, the magnitude and speed of the private investment response to the new economic incentives brought about by these reforms have received relatively little attention in the analysis of adjustment programs.

With this in mind, a World Bank research project during 1990–91 focused on the relationship between private investment and macroeconomic adjustment (see box). This project aimed to: (1) understand the determination of private investment, (2) highlight the channels through which adjustment policies affect private capital formation, and (3) analyze the impact of adjustment policies on capital formation in developing countries in the last decade.

Key questions and answers

Based on the recent adjustment experience of developing countries, the analytical and empirical papers produced in the project set out to answer five key questions regarding the effects of standard macroeconomic adjustment measures on investment, as follows.

What is the impact of a depreciation of the real exchange rate on private investment?

A crucial component of most adjustment programs is a real devaluation of the exchange rate, oriented to restore external balance and make room for a resumption of growth. The effect of real exchange rate changes on the level of aggregate private investment is complex. Time series studies for individual countries tend to indicate that the volume of private investment may initially drop, and then recover, following a currency depreciation. In fact, a real devaluation squeezes real balances, cuts real wages, and increases the real price of imported capital goods, leading to a contraction in domestic aggregate demand and capital formation in the short run. However, it stimulates export and import-competing industries, thereby encouraging investment in these and other related sectors.

Cross-country work for countries in Latin America, East Asia, and Africa suggests that the level of the exchange rate has an ambiguous impact on the level of private investment. But our study shows that the variability of the real exchange rate (as a measure of macroeconomic uncertainty) has a much stronger and adverse effect on capital formation than does its level. Hence, a stable and predictable exchange rate policy is crucial to promote investment.

What has been the impact of cuts in public investment on private investment?

During the 1980s, fiscal adjustment in many developing countries led to an excessive compression of public infrastructure investment. This may have later jeopardized the recovery of private investment and growth. Hence, the relationship between public and private investment depends crucially on the composition of the former. Infrastructure investment (and also public expenditures on infrastructure maintenance and on human capital formation) is likely to stimulate private investment; non-infrastructure public investment may have the opposite effect, bidding resources away from the private sector.

Empirical studies for Latin America and Asia strongly suggest that public and private investment go hand in hand. These studies also indicate that public sector deficits "crowd out" private investment by pushing up interest rates and reducing the availability of credit to the private sector. Thus, an appropriate composition of public expenditures, protecting sound public capital formation during adjustment complemented by overall fiscal balance, is required to promote private capital formation.

Why is the response of private investment in the aftermath of adjustment so weak and delayed?

During the course of an adjustment program, private investment goes through a cycle. Initially, private (and often public) investment falls; then it reaches a "plateau" that suggests a "wait-and-see" attitude on the part of private investors. Once macroeconomic stability is restored and the reforms are consolidated, private capital formation takes off. In practice, however, the arrival of this phase of sustained recovery may take several years.

A key explanation for this unexpectedly slow and weak response lies in the high "value of waiting" that arises in the context of fragile adjustment and unconsolidated reform. Investment, once installed, is irreversible—that is, it cannot be put to use in a different sector, at least not without substantial costs. Hence, investors may opt to wait for new information before undertaking a risky investment project. As a result, the response of investment to a new set of economic incentives brought about by an adjustment program is bound to be weak if the macroeconomic environment is unstable and the new policy regime is perceived as fragile.

Unless investors view an adjustment program as internally consistent and are convinced that the government will carry it out despite the implied social costs, the possibility of reversal will become a crucial determinant of the investment response. Governments can reverse adjustment policies, but investors cannot undo decisions about fixed capital. Thus, the stability and predictability of the incentive structure is likely to be at least as important as the level of incentives, in the form of wages, taxes, and interest rates. Attractive market incentives for capital formation are a necessary, but not sufficient, condition for the resumption of private investment and growth.

A study analyzing the effect of irreversibility on investment using data for selected developing countries, found that fixed investment becomes very sluggish in conditions of high uncertainty. Investment incentives would therefore have to be very large to promote a significant recovery of capital accumulation. Clearly, a stable macroeconomic framework, policy predictability, and clear rules of the game are key ingredients for private investment to thrive. Hence, differences in the degree of macroeconomic stability during adjustment explain considerable cross-country diversity found in the response of private investment to liberalization programs. In Chile, for example, private investment reacted quite forcefully during the late 1970s and late 1980s. The response was more moderate in Mexico in the late 1980s, and in Bolivia, private investment failed to respond to the stabilization and liberalization programs of the mid-1980s.

What is the effect of the external debt burden and external financing constraints on investment?

The external debt burden hampers investment through at least three channels: first, debt service requires an external transfer that in conditions of restricted external financing and reduced consumption leads to reduced levels of investable resources; second, the an-

The analytical papers produced in the project include:
Luis Serven and Andrés Solimano "Private Investment and Macroeconomic Adjustment: A Survey"; Robert Pindyck "Irreversibility, Uncertainty and Investment"; Ricardo Caballero "On the Dynamics of Aggregate Investment"; and Martin Rama "Empirical Investment Equations in Developing Countries."

The empirical papers include:
Luis Serven and Andrés Solimano "Economic Adjustment and Investment Performance in Developing Countries: The Experience of the 1980s"; Eliana Cardoso "Macroeconomic Environment and Capital Formation in Latin America"; and Felipe Larrain and Rodrigo Vergara "Investment and Macroeconomic Adjustment: The Case of East Asia."

These papers will be included in the forthcoming book edited by Luis Serven and Andrés Solimano, *From Adjustment to Sustainable Growth: The Role of Capital Formation*, The World Bank.

ticipated "tax" associated with future debt service (the debt overhang) reduces the anticipated return on investment; third, uncertainty about the policies needed in the future to meet an equally uncertain debt service also tends to depress investment (see "Will Debt Reduction Increase Investment?" by Eduardo Borensztein, *Finance & Development*, March 1991). The adverse impact of the debt burden on investment is confirmed empirically in all the studies in the project.

What policy implications can be derived from the analysis to revive private investment?

The analysis shows that macroeconomic restraint, especially when sharp and protracted, has an overly adverse impact on capital formation in the short term. In contrast, the effects of liberalization policies on the composition and productivity of investment tend to develop more slowly. This asymmetry should be taken into consideration in the design of adjustment programs and, especially, in the assessment of their likely short-term costs.

Public policies can promote investment in two main areas. Sound public investment in physical infrastructure and human capital must be protected during the course of adjustment; this is needed both from the viewpoint of boosting complementary private investment and also because of its own contribution to long-term growth. In addition, priority must be given to the consolidation of macroeconomic stabilization during the design of adjustment programs. Sustainable policies are often better at promoting private investment than are premature attempts at liberalization, which can be reversed because of a lack of solid macroeconomic foundations and weak political support. Adequate action in these two areas is a key ingredient in the design of growth-enhancing adjustment programs. ■

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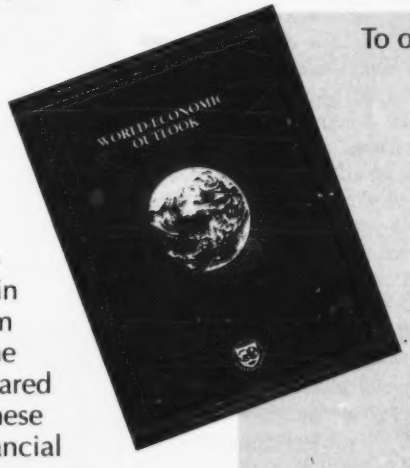
World Economic Outlook

October 1992



What are the prospects for economic recovery in the industrial world, for sustainable growth in the developing world, and for economic reform in the former centrally planned economies? The October 1992 World Economic Outlook, prepared by the IMF's Research Department, explores these and other issues in its latest economic and financial analyses and forecasts for both industrial and developing countries. It assesses key economic variables-- global output and trade, inflation, and financial flows-- and gives short-term prospects for both country groups, and medium-term prospects under alternative policy scenarios.

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Bicycles, Rickshaws, and Carts in Asian Cities

Nonmotorized vehicles continue to be an important part of urban transit systems in Asia

When it comes to urban transportation and haulage, it may be a case of "Back-to-the-Future" for Asian cities. Nonmotorized vehicles (NMVs in the jargon of economists and city planners) account for 25 to 80 percent of all vehicular transport in many Asian cities. In Shanghai, for example, nearly half the population rides a bicycle, and rickshaws and hand-pushed carts are a widespread sight in most cities in Asia today.

Although the number of cars is increasing at great speed, the number of NMVs also continues to rise. This may be good news for city planners and environmentalists who are trying to cope with pollution and other costs associated with motorized traffic in developing cities. NMVs offer affordable, quick, and convenient transportation for trips of short to intermediate distances. They are also ecologically sound, significantly reducing air and noise pollution, petroleum consumption, global warming, and traffic congestion.

Yet, the future of NMVs is at risk unless their use is supported by government policy. As Asian cities continue to grow—most of the world's largest cities are in this region—and as the number of motor vehicles increases, street space for safe NMV use is frequently lost. In addition, credit financing and transport planning often favor motorized vehicles. In Jakarta, for example, bans, fines, and taxes that severely restrict or eliminate rickshaws have been in effect over the past five years.

Nevertheless, support for one transportation mode need not exclude the other. Adopting regulations that support NMV use, while allowing for motor vehicles and pedestrian traffic, is an attainable, realistic goal, as many Asian cities have discovered. This can be achieved by maintaining extensive cycle paths and NMV parking at rail and bus terminals to provide easy access to as many destinations as possible to both drivers and cyclists. Employee commuter subsidies offered to those bicycling to work, and accelerated domestic NMV production are other effective incentives for NMV use.

As indicated in the accompanying tables and charts based on a recent World Bank report, NMVs play an important role, for a number of different reasons, in total vehicle share in Asian cities. With suitable policies supporting their use, this share could grow larger.

This presentation is based on Non-Motorized Vehicles in Asian Cities, by Michael Replogle, World Bank Technical Paper Number 162, available from the World Bank Publications Sales Unit, $6.95.

Transport sector characteristics in Bangladesh

	Fleet size (Number)	Unit value (Tk x 1,000)	Asset value (Tk x 106)	Employment (thousands)	Transport charges (Tk/ton-kilometer)
Motorized vehicles					
Buses	8,400	700	5,880	15	..
Trucks	15,500	300	4,650	30	..
Small van	..	..	..	..	15
Other four-wheelers	5,400	150	810	..	..
Auto rickshaws	13,940	50	697	20	17
Inland water vessels	2,300	3,000	6,900	25	15
Nonmotorized modes					
Headloading	..	..	..	..	62
Cycle rickshaws	698,000	5	3,490	1,000	17
Bullock carts, etc.	160,000	10	1,600	300	17
Country boats	300,000	30	9,000	1,500	..
Small boats	..	..	..	..	14
Large boats	..	..	..	..	7

.. Indicates data not available.

Estimated number of cycle rickshaws in selected Asian countries, 1988

	Estimated number of cycle rickshaws
Asia	3,180,000
India	1,700,000
Bangladesh	633,000
China	500,000
Indonesia	200,000
Myanmar	60,000
Nepal	50,000
Thailand	15,000
Laos	several thousand
Cambodia	several thousand
Singapore	500
Hong Kong	very small
Macao	very small
Others (Japan, Pakistan, Korea, Rep. of)	15,000

Vehicles in selected cities and countries

ity	Year	Bicycles (thousands)	Motor vehicles (thousands)	Population (thousands)	Bicycles per 1,000 residents	Motor vehicles per 1,000 residents
hina	1988	300,000	1,200	1,104,000	272	1
Beijing	1982	3,773	..	9,231	410	..
Shanghai	1988	5,600	200	12,400	445	12
dia	1985	45,000	1,500	765,000	59	2
Bombay	1981	984	90	8,200	120	11
New Delhi	1981	945	313	5,800	163	54
Madras	1979	272	64	4,000	68	16
donesia	1985	..	..	164,050	100	..
Jakarta	1985	..	..	7,600	35	..
Surabaya	1976	200	144	2,300	..	..
angladesh	1982	1,500	250	92,585	..	..
orea, Rep. of	1982	6,000	..	39,000	154	..
hailand	1982	2,500	400	49,000	51	53
hailand	1986	..	6,300	54,960	..	116
alaysia	1982	2,500	900	14,000	179	64
pan	1988	60,000	30,700	122,000	492	252
etherlands	1985	11,000	4,900	14,000	786	350
nited States	1988	103,000	139,000	245,000	420	567

.. indicates data not available.

Number of buses per 1,000 people, 1985

City	Buses per 1,000 persons
Seoul	4.59
Chicago	4.33
Stockholm	1.67
Mexico City	1.39
Karachi	2.71
Shanghai	0.99
Jakarta	0.70
Cairo	0.55
Calcutta	0.42

Note: Includes buses run by public and private bus companies.

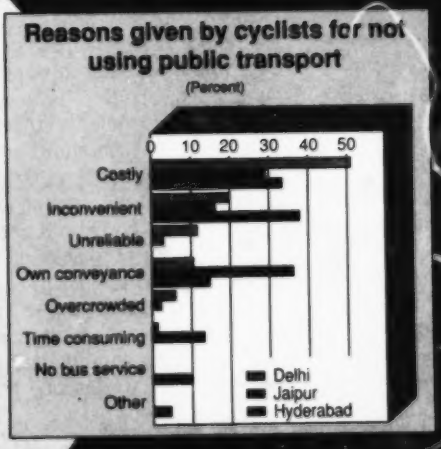
Bicycle trip length distribution in three Indian cities

City	Percent by distance (kms) 0-5	6-10	11-15	16-20	20+	Total	Average trip length (km)	Population (millions) 1981
New Delhi	24.0	25.5	24.6	15.2	10.7	100.0	10.9	5.7
Jaipur	65.2	26.7	--	8.1	--	100.0	4.9	2.2
Hyderabad	49.0	36.9	8.7	2.0	3.4	100.0	6.4	0.9

Bicycle trip travel time distribution in three Indian cities

(In percent)

City	Minutes of travel time by bicycle <20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	90+	Total
New Delhi	—	28.0	12.7	16.9	15.3	7.5	6.1	6.9	6.6	100.0
Jaipur	56.0	22.9	9.8	4.0	2.4	—	4.9	—	—	100.0
Hyderabad	29.6	28.2	14.8	8.7	7.4	2.0	1.3	1.3	6.7	100.0



BOOKS

Bimal Jalan

India's Economic Crisis

The Way Ahead

Oxford University Press, New York, NY, USA, 1991, vii + 245 pp., $19.95.

It is always nice to welcome back a prodigal son, even one who has not completely eschewed his past rebellion! Bimal Jalan, who has been at the center of India's financial bureaucracy for two decades, has written a book that is, in part, a personal expiation of past ways of thinking. As he notes, he "along with most Indian economists and civil servants at that time, shared the vision and assumptions of India's Plans and the early development literature regarding the nature of the State, of its supposedly unlimited capacity to intervene in society's interest" (p. 10). In retrospect, he admits he "did not pay adequate attention to the real determinants of state action, nor to the economic consequences of excessive bureaucratic intervention" (p. 11).

Alas, as his conversion to economic liberalism is only partial, many of the defects of the book are due to his inability to completely slough off his past skin. Perhaps one of the major reasons why Indian intellectuals promoted policies that repressed the economy's growth rate below its potential after Independence was a misreading of India's economic history under the British Raj. The nationalist cum Marxist distortion of the lessons to be learned, particularly regarding fiscal, trade, and industrial policy in the near century since 1857, haunt Jalan's pages. Many of his recommendations—for instance on containing fiscal deficits through a constitutional limit on the government's power of deficit finance, are wholly commendable. But many others—such as a partial trade liberalization, the conversion of public sector enterprises into publicly owned conglomerates, and the continuation of food subsidies—are mere tinkering at the edges of the traditional Revenue Economy (in the sense of Hicks) that India has recreated since 1947.

One cannot, in the short space allowed, detail the sources of the intellectual errors underlying what Jalan would call a "pragmatic" approach to reform. For reasons most clearly set out in Hayek's *The Constitution of Liberty*, half-hearted measures to restore economic liberty are unlikely to succeed. More important, however, is Jalan's neglect of the political economy of reform. Here, the parallels drawn from the crisis faced by India, by many other statist regimes in the Third World, as well as those by the mercantilist "ancien regimes" of 18th-century Europe, as detailed in Eli Hecksher's monumental *Mercantilism*, are instructive.

The motive behind the system of controls called mercantilism, established by Europe's Renaissance monarchs, was the nationalist desire to weld their disparate populations into a nation. But paradoxically, after a certain stage, the increasing state control of the economy bred dissatisfaction and disorder. The result of the ensuing loss of state control was a fiscal crisis. This, in turn, triggered the period of economic liberalism in the 19th century, as the State sought to restore its fiscal base by inducting more of the populace into the legal economy by reducing its onerous controls. Economic nationalism, combined in many cases with the socialist idea, first leads to a neomercantilist system of controls, and then to their reform as the State seeks to recover the loss of control over its fiscal base.

Free trade, a hard currency (preferably underwritten by an independent central bank), and Gladstonian finance, are the three economic policy pillars of a liberal economic constitution. They are in the interests not only of the citizens but also of the State (at least in the long run). Whether they are in the interests of intellectuals is another matter. In a revealing footnote, Jalan notes that whereas many of India's former economic bureaucrats have now recognized the virtues of the market, most Indian intellectuals have not. Jalan seems to be torn between these two camps. But perhaps, as good Marxists, Indian intellectuals will accept the verdict of their god—History. The worldwide collapse of socialism, for political economy reasons similar to those outlined above, might persuade my old friend Bimal Jalan, too, to finally endorse the economic liberalism that some of us have so unsuccessfully espoused in India for so long.

Deepak Lal
James S. Coleman Professor
of International Development Studies
University of California, Los Angeles

Rudiger Dornbusch and Sebastian Edwards (editors)

The Macroeconomics of Populism in Latin America

The University of Chicago Press, Chicago, IL, USA, 1991, ix + 402 pp., $65 ($21.95 paper).

This book is a collection of country-specific essays written by various well-informed authors that explore the question, "What is populism?" In an insightful overview chapter, the two editors offer various definitions. Populism is characterized by "political mobilization, recurrent rhetoric and symbols designed to inspire the people." Elsewhere, substantial differences are noted "between 'classical' populism," based on the existence of populist movements, e.g., under Peron and Vargas, "socialist" experiments (Allende or the Sandinistas in Nicaragua), and nonorthodox stabilization programs, such as the Austral plan of Argentina and the Cruzado plan of Brazil, which certainly included populist elements but do not qualify, strictly speaking, as populism. Politically, populism ranges from the military right (Peron) to the socialist left (Allende). Like the giraffe, populism is extremely hard to describe but when you see it, you know what it is.

Most of the essays in the book focus on the macroeconomic dimensions of populism, because of the attempted use of (or rather disregard for) fiscal, monetary, exchange rate, and wage policies in pursuit of economic reactivation and (at least according to rhetoric) poverty alleviation and income redistribution. Populism also favors considerable and detailed government intervention in the economy, as well as increased protection from foreign competition. The risk of inflation is discounted at the outset because of the mistaken belief that additional output will bring idle capacity to life.

What is the record of populist episodes? Growth may be boosted for a year or two but collapses once foreign currency reserves are exhausted, as the overvalued exchange rate wrecks the trade balance and capital flees the country. Pervasive shortages, extreme acceleration of inflation, and demonetization of the economy then herald the inevitable hangover: Another government will try to pick up the pieces and, by this time, wages and the level of economic activity are lower than they were to begin with. The poor, on whose behalf populist policies were launched, end up being worse off because populism invariably favors urban wage earners at the expense of farmers and of those in the "informal sector."

Why then are there so many populist episodes? Why does not economic rationality prevail? This is a bit like asking why there are so many teenage pregnancies. Economists are (luckily) only an infinitesimal fraction of the world population; their universe of discourse is quite alien to the public and indeed to many politicians. Populist politicians, on the other hand, often have immense popular appeal. It is hardly surprising, therefore, that orthodox economists often enter the scene only after the debacle.

The book rejects the populist lure convincingly and should be required reading in most of the countries of Eastern Europe and the former Soviet Union. Its main message is that "concerns for poverty and inequality are not only legitimate, but clearly of great urgency. The issue is not whether . . . distributional problems should be addressed . . . but how to better tackle them." William R. Cline spells out the only proven recipe for a successful strategy for growth with equity: " . . . [it] must include: overall fiscal balance; the avoidance of unrealistic wage increases; concentration of antipoverty action on government spending on low-end social services, especially in rural areas; an open-trade model for efficiency and greater labor intensity; and firm anti-inflation programs, because inflation is the biggest enemy of the poor."

Guy Pfeffermann

Ronald I. McKinnon

The Order of Economic Liberalization

Financial Control in the Transition to a Market Economy

The Johns Hopkins University Press, Baltimore, MD, USA, 1991, xii + 200 pp., $28.

For 20 years, Professor McKinnon has been writing about how to open up repressed financial and foreign trade systems in less developed countries. He has made many original contributions to thinking about the optimal order of liberalization. This book consists mainly of the essays he has written on this subject over the last ten years, with some adaptations and extension. It is, however, more than this. By adding new material, especially an introductory chapter on the order of economic liberalization and an expanded chapter on stabilizing the ruble, the book paints a broad picture of problems of financial control in the transition from a centrally planned to a market economy.

McKinnon argues that the first priority in liberalizing depressed economies is fiscal control. In the case of centrally planned economies, this requires that a tax system for raising revenue from enterprises be put in place before the enterprises are privatized, otherwise their surpluses will move beyond the government's reach. Fiscal control must cover quasi-fiscal deficits, such as losses incurred by central banks in subsidizing credit or guaranteeing foreign currency deposits, as well as the government's own deficit.

After fiscal control, the domestic financial sector can be liberalized. Here one should start with the liberalization of interest rates, so that they become positive in real terms. More generally, the system of money and credit should be "hardened" at a relatively early stage to bring about the stabilization of the price level. This should include forcing repayment by chronically indebted enterprises and strictly limiting credit expansion. The decentralization of the banking system through private ownership or control of commercial banks might well come near the end of the reform process.

Turning to the external sector, McKinnon argues that the exchange rate should be unified before eliminating centralized controls over who can import or export—something that was not done in Russia or any of the states of the former Soviet Union. While quantitative restrictions on trade should be removed at an early stage, preferably when prices are liberalized, they could be temporarily replaced by tariffs set at an equivalent level. These tariffs would be phased out over a preannounced period of years. Full capital account convertibility should wait until domestic financial liberalization has been completed and price stability established. This is usually the last stage in the optimal order of economic liberalization.

If these prescriptions appear familiar, it is perhaps because they are incorporated in much of the policy advice of the IMF and the World Bank. McKinnon himself deserves part of the credit for this because of his pioneering work, which is clearly described in this book. However, while the book sets out the key points of the order of economic liberalization, it also provides a wealth of detailed illustrations and analyses of specific aspects, such as reserve requirement policy, adverse risk selection, capital flight, monetary overhang, and seignorage in a number of countries, most of them in South America, East Asia, and Eastern Europe. It will, therefore, be invaluable for those wishing to pursue in more detail specific aspects of financial liberalization.

John Odling-Smee

Michael Roemer and Christine Jones

Markets in Developing Countries

Parallel, Fragmented, and Black

The International Center for Economic Growth and the Harvard Institute for International Development, ICS Press, San Francisco, CA, USA, 1991, xvii + 267 pp., $12.95.

Politicians often want to control markets. This does not mean that they should be encouraged to do so. Indeed, their attempts to exercise control should be under constant scrutiny. Economists should make every effort to analyze and explain the cost and inefficiency of controls and remind, or even shame, politicians about the cost to society of some of these policies. This book does an excellent job in reminding us of such problems, using nine papers to analyze specific examples of parallel, fragmented, and black markets.

Parallel markets arise in response to government interventions that create ex-

cess supply or demand in product or factor markets. For example, managed foreign exchange rates create—usually illegal—foreign exchange markets; import quotas and licensing give rise to parallel markets in smuggled goods and bribes for licenses; interest rate controls inculcate curb markets; legislated minimum wages and special employees' benefits generate parallel labor markets; and taxes can bring about parallel, illegal, nontaxed supplies of goods, services, and labor. Fragmented markets can develop even in the absence of controls. Markets can be segmented by, for example, transportation costs, access, or information costs. Rural credit, for instance, is often separated from the large urban capital market. Black markets are most often illegal, sometimes dealing in prohibited goods for which there can be no legal parallel market. Black money can generate an underground economy where the risk of arrest can involve substantial payments to avoid discovery.

The principle policy conclusion that is formed is that parallel markets help soften the bad effects of government controls but, of course, at a cost. The cost will be higher the more the government tries to enforce its controls. Fines and bribes (and indeed the higher margins) of parallel markets tend to exacerbate inequality of incomes. Parallel markets also "offer an escape from bad policies that cannot be reformed." Politicians and bureaucrats are more likely to reinforce the controls rather than relax them and let parallel markets allocate resources more efficiently.

Because of the very nature of parallel markets, data is hard to come by. Therefore, most of the chapters have had to spread a little data a long way. One of the most interesting, on "Time and Money in Western Sahel," is entirely descriptive. Another, on "Taxes, Corruption, and Bribes: A Model of Indian Public Finances," is analytical, but uses no data; it suggests that a decision to lower tax rates may also lower the incentive to audit. When many tax officials are corrupt, this leads to a decline in tax revenue. Whether this "important result" is valid in the absence of any empirical data is questionable. After all, it could be reasoned that higher tax rates, although increasing the incentive to audit, also increase the incentive to evade taxes and thus increase the value of the bribe. Whether or not the increased bribe reduces revenue more than the reduced likelihood of audit with an equivalent reduction in tax rates would be an interesting empirical problem. However, given the data needed for "areas of future theoretical and empirical research" (e.g., among others, the proportion of corrupt auditors and the agreed bribe rate), the likelihood of rigorous testing seems remote.

Three chapters on informal credit markets suggest that where markets are fragmented (e.g., rural money lenders), the best policy may be not to deregulate the markets, but to first work on integrating the informal markets into the formal. Then, when deregulation actually takes place, everyone, including those in the fragmented market, can benefit.

The aim should not be, as this book argues, to alert officials and major aid agencies of the impact of parallel markets on policy reform. Officials in developing countries are all too well aware of the impact of control policies. After all, that is where some get their bribes from. In many such economies, the officials have their own agenda with respect to maintaining the structure of controls. Certainly, "major aid agencies" are aware of this problem. The need is to convince those in power of the costs to society of such controls, and, by reason, help to eliminate such inefficient policies. This book helps to that end.

Alan Tait

Miroslav N. Jovanovic

International Economic Integration

with foreword by Richard G. Lipsey

Routledge, New York, NY, USA, 1992, xxiv + 302 pp., $49.95.

The recent debate over the implementation of economic and monetary union in Europe and the prospects of widening membership in the European Community have once again focused attention on the costs and benefits of economic integration. It is fortunate, therefore, that this book has arrived at this time. In this ambitious work, Dr. Jovanovic presents an exhaustive survey of the existing literature on economic integration and attempts to update it to incorporate the new industrial organization and strategic trade theory. It is essentially the second of these tasks that makes this book unique in the field.

The traditional theory of integration, based on neoclassical trade models, concludes that the gains from free trade imply a welfare case for integration. However, this argument, taken to its logical conclusion, implies a case not for integration among a subset of economies with external tariff barriers between such units but for free trade between all countries. Moreover, the assumptions underlying the theory are no longer tenable. In a world with market imperfections and scale economies, free trade is not necessarily the optimal policy.

What the new theory adds is an appreciation of the dynamics of the adjustment to integration and of the benefits that accrue from the exploitation of scale economies in a secured market. The book, however, does not really solve the problem of identifying geographical limits to integration. In addition, while integration is presented as part of a possible package of policies designed to correct market imperfections or exploit scale economies, in fact, strategic trade theory provides justification for government intervention on an industry-by-industry basis rather than on a national basis.

Presented in an easily readable mixture of theory and practice, the book, at each step, provides examples and lessons from experience with integration. In this way, the reader does not have to wait until the end to find out how integration works in the real world. The book deals first with customs unions, then common markets, and finally with complete economic union. This latter chapter is the longest, and rightly so. In it, the author discusses the conduct of monetary, fiscal, industrial, regional, and social policy. The final substantive chapter provides a summary of empirical work on integration.

The exhaustive review of the literature and the extensive bibliography make this book an indispensable reference work. Its easy presentation makes it accessible to almost any interested reader. More important, the incorporation of noncompetitive theory and frequent illustrations from practice will give the reader greater insight into current developments.

Michael Spencer

Georg Sorenson

Democracy, Dictatorship and Development

St. Martin's Press, New York, NY, USA, 1991, vi + 308 pp., $45 ($28 paper).

Development scholars and practitioners are currently revisiting one of the oldest—and most controversial—questions: What is the relationship between types of political regimes and economic development? Sorenson, an Associate Professor at Aarhus University, Denmark, reviews some of the literature addressing this theme, examining four cases in light of two competing hypotheses: (1) democratic regimes may not perform well for economic development since they are less able to withstand popular pressures for increases in consumption and welfare. Further, policy processes are sometimes seen as vulnerable to influence from powerful interest groups; and (2) autocratic regimes committed to growth may achieve economic development, but are likely to deprive citizens of welfare, focusing mainly on acquiring capital for investment.

Much of the book is an examination—largely descriptive—of four cases: India, China, Taiwan Province of China, and Costa Rica. In each case, Sorenson concentrates on the economic aspects of land reform, agriculture, industrialization strategies, and the role of external factors. He then returns to the central arguments and compares similar types of regimes—India with Costa Rica, and China with Taiwan Province of China. Sorenson concludes, not surprisingly, that democratic regimes may be more susceptible to elite interests and hence slower to reform, while autocratic rule in small open countries can generate higher savings as a basis for higher levels of growth. We know that there are authoritarian regimes that have brought growth but little welfare; others that have brought growth and welfare; and yet another group that has brought neither growth nor welfare—but only elite enrichment. The author's findings, therefore, are hardly original.

Indeed, Sorenson might have provided greater insight had he drawn upon A.K. Sen's theory of "entitlements." Sen points to the way in which India's and China's past development strategies created political entitlements that had an impact on future growth and welfare. Sen observes that India, with its entitlement to a free press, has not had famines, but does have widespread malnutrition. China, on the other hand, with no entitlement to a free press, has much less malnutrition, but has had famines. His point is that more analysis should focus on the role of entitlements in affecting regime behavior. Only then will development scholars and practitioners know some of the answers to the problem of the relationship of democracy to economic development.

Coralie Bryant

Other Books Received

Listed below are some of the books we received but were unable to review because of lack of space.

Latin America

Eliana Cardoso and Ann Helwege, **Latin America's Economy: Diversity, Trends, and Conflicts**, The MIT Press, Cambridge, MA, USA, 1991, viii + 326 pp., $29.95.

Victor J. Elias, **Sources of Growth: A Study of Seven Latin American Economies**, International Center for Economic Growth, San Francisco, CA, USA, 1992, xx + 254 pp., $14.95 (paper).

Patricio Meller (editor), **The Latin American Development Debate: Neostructuralism, Neomonetarism, and Adjustment Processes**, Westview Press, Boulder, CO, USA, 1991, xiii + 220 pp., $37.50.

Simon Teitel (editor), **Towards a New Development Strategy for Latin America: Pathways from Hirschman's Thought**, The Johns Hopkins University Press, Baltimore, MD, USA, 1992, xii + 403 pp., $25 (paper).

East Asia

Dilip K. Das, **Korean Economic Dynamism**, St. Martin's Press, New York, NY, USA, 1991, xiv + 230 pp., $79.95.

Taktoshi Ito, **The Japanese Economy**, The MIT Press, Cambridge, MA, USA, 1992, xvi + 455 pp., $39.95.

Nicholas R. Lardy, **Foreign Trade and Economic Reform in China 1978-1990**, Cambridge University Press, New York, NY, USA, 1992, x + 197 pp., $44.95.

Byung-Nak Song, **The Rise of the Korean Economy**, Oxford University Press, New York, NY, USA, 1991, xviii + 278 pp., $14.95 (paper).

Gordon White (editor), **The Chinese State in the Era of Economic Reform**, M.E. Sharpe, Armonk, NY, USA, 1991, xiii + 345 pp., $49.95.

Eastern Europe

Judy Batt, **East Central Europe from Reform to Transformation**, and John Pinder, **The European Community and Eastern Europe**, The Royal Institute of International Affairs, Council on Foreign Relations Press, New York, NY, USA, 188 pp., and 129 pp., respectively, both $14.95.

Oliver Blanchard, Rudiger Dornsbusch, Paul Krugman, Richard Layard, and Lawrence Summers, **Reform in Eastern Europe**, The MIT Press, Cambridge, MA, USA, 1991, xxiii + 98 pp., $17.95.

Robert W. Campbell, **The Socialist Economies in Transition: A Primer on Semi-Reformed Systems**, Indiana University Press, Bloomington, Indiana, USA, 1991, vi + 241 pp., $35 ($12.95 paper).

Richard A. Debs, Harvey Shapiro, and Charles Taylor, **Financing Eastern Europe**, Group of Thirty, Washington, DC, USA, 1991, iii + 203 pp., $15.

Iliana Zloch-Christy, **East-West Financial Relations: Current Problems and Future Prospects**, Cambridge University Press, New York, NY, USA, 1991, xiii + 126 pp., $16.95.

LETTERS

Constraints to Africa's growth

Lawrence Summers' typically pugnacious article, "The Challenges of Development" (*Finance & Development*, March 1992), provides a cogent summary of the way in which the actions of politicians and planners in Africa have been largely responsible for the dreadful economic situation many African countries find themselves in today.

However, he attributes all of Africa's ills to national policy failures and ignores the crushing impact that a series of droughts during the past 25 years have had on these countries in the early 1970s and the early to mid-1980s, as well as the fact that the shortage of rains during the most recent growing season in much of central east and southern Africa have had a devastating impact on the peoples and economies of many of the countries specifically referred to in the article—Ethiopia, Kenya, Mali, Mozambique, Niger, and Zimbabwe, for example. While many African governments cannot be absolved from some of the problems now besetting their countries, Summers' article risks being shunned as an excessively dogmatic piece by ignoring this fundamental environmental factor that has also acted as a significant constraint to growth.

Summers also fails to address one of the fundamental features of the current debate scene in much of Africa. The reduction in loans from commercial sources in recent years means that for several countries, the "major creditors" who Summers advocates should negotiate "substantial reductions in debt service," are in fact multilateral agencies—development finance institutions such as the World Bank, the African Development Bank, and the International Monetary Fund. And yet, under their articles of association, repayments to these institutions cannot be rescheduled.

It would be interesting to know what Summers proposes as a solution to this quandary so that the debt overhang that now threatens the very process of economic adjustment can be reduced to more manageable levels.

Martin Fowler
Oxford, England

Mr. Summers replies:

Certainly not all of Africa's ills are due to policy. My article focused on policy for three reasons: accumulating evidence suggests that a poor policy environment accounts for a large component of Africa's relatively poor performance, one of the benefits of good policies is that they mitigate the effects of adverse shocks on an economy, and discussions of policies are ultimately more interesting than discussions of the weather because, unlike the weather, policies can be changed.

The World Bank is making great efforts to maintain an appropriate level of assistance into the countries of Sub-Saharan Africa, including those countries that formerly received nonconcessional (IBRD) loans. Far and away the greatest portion of this assistance is highly concessional IDA resources, which contribute very little to future required debt service (especially in the near term) and hence do not exacerbate debt overhang.

Addressing gender inequality in Africa

Professor Mazrui's article entitled "The Economic Woman in Africa" (*Finance & Development*, June 1992) sparks interesting questions concerning gender inequality in the African continent, and the reconciling of African traditional values with the pressures of the modern global economy. While there is plenty of evidence to support his assertions that agricultural mechanization and the internationalization of African economies have had a negative economic impact on African women, there seems to be a flaw in the third component of his argument.

Professor Mazrui states that western-style education has resulted in the marginalization of African women in the "productive professions in cities." He defines this kind of education as the successful completion of secondary school along with at least two years of post-secondary education, claiming that as a result, women "settle for jobs as clerks, telephone operators, secretaries, and teachers." What is implied is some sort of causal link between "female westernization and functional marginalization."

Although it is certainly true that many elements of western-style education are inappropriate for Africa and other regions of the world (including, even, many western countries), it is perhaps distortionary to propose that it is primarily responsible for the exclusion of African women from higher-level formal sector jobs. If this were the determining factor causing women to "settle" for lower-level jobs, why has western-style education not had a similar impact on African men? Although Professor Mazrui cites the examples of a Liberian woman president of a university and a Ugandan female foreign minister, it is, of course, the general pattern that the highest positions in business, government, and politics in Africa are held by men, many of whom have received a "western-style education". A more reasonable explanation of why African women do not hold more of these posts is because they suffer discrimination based on their sex.

The appropriate policy response in this instance is, therefore, not one that targets western-style education (although it certainly needs addressing for other reasons), but rather one that focuses on the real mechanisms that exclude women from higher-level formal sector jobs. Programs that address gender inequalities in all forms of education (including the Islamic and indigenous types to which Professor Mazrui refers) and other legal and institutional changes that contribute to promoting and protecting women's rights would go a long way in getting at the real roots of women's low socioeconomic status in Africa.

Anna C. Vakil
Ypsilanti, MI, USA

Who contributes to agricultural productivity?

I enjoyed reading Robert Blake's article on "Challenges for Global Agricultural Research" (*Finance & Development*, March 1992). Mr. Blake rightly points to the major contribution of the International Agricultural Research Centers to producing and disseminating more productive food crops. He also draws attention to the recent desirable change of direction toward promoting more sustainable agricultural systems.

But in his prognosis for the future of global research, Mr. Blake places far too much emphasis (despite caveats) on the ability of the international centers to "be all things to all men." While he acknowledges the important role of national institutions of various kinds in agricultural development, he understates the key contributions that such institutions have already made to agricultural progress in many countries, especially in Asia. The huge advances in tree crop cultivation over past decades have had little connection with the International Centers. The examples of Korea, Malaysia, and Indonesia also attest to the great effectiveness of local food crop programs, whose only link with the Centers has been through using or modifying new varieties. It seems to me that the major roles of the Centers are in the breeding of improved crops and in the assessment of global needs that go beyond national boundaries. This emphasis, which has been carried out effectively in the past, should not be too watered down by other types of programs.

In addition, I believe that Mr. Blake puts undue weight on the role of agricultural research in the World Bank, which he suggests should take on the job of overall "managing director." While financial institutions obviously have an important contribution, it would be dangerous to place too much power and direction in their hands. Surely the national producer and consumer groups, scientists, and governments have the best appreciation of local situations and can together provide excellent guidance in agricultural research. The Bank already has considerable political weight in programs of agricultural development around the world, and it would seem unwise to increase that any further.

Colin Barlow
Cook, A.C.T., Australia

Attaining food security

The article by Ridwan Ali and Barbara Pitkin, "Searching for Household Food Security in Africa" (*Finance & Development*, December 1991), reveals to a great extent the task before African policymakers in addressing and tackling the food crisis in the continent. The authors clearly point out that food security is access to enough food by all people at all times for an active, healthy life. But food security should be viewed not only from the perspective of supply stability but also from income stability.

Food security can be achieved by evolving a strong food policy that will stabilize both food supplies and the real incomes of the more vulnerable groups. These include the biologically vulnerable (lactating mothers and children), and the economically vulnerable (the poorest of the poor). And for this to be achieved, food security should take top priority in the food policy framework. The authors also note that the attempt by many developing countries to attain food security through food self-sufficiency, with particular attention to increasing domestic production, has so far failed. This comes as no surprise. In general, the governments of many of these countries pay lip service to food security and self-sufficiency in food production, using mere slogans to expect miracles without any concrete planning. Food security and food self-sufficiency should be regarded as a policy statement rather than a working plan and, therefore, should not be abandoned or modified midway without good reasons.

Food self-sufficiency, however, does not automatically result in food security. Rather, the harnessing of domestic inputs or resources to reduce the magnitude of rural poverty to the barest minimum, by raising the real incomes of rural inhabitants, is fundamental to achieving food security. African policymakers are faced with a dual problem of setting a price floor (price above the market equilibrium), which might increase malnutrition, and enforcing a price ceiling (price below the market equilibrium), which might reduce farmers' income, thereby discouraging production. The reason the marketing system in Africa is inefficient is in large part the result of improper education of rural farmers, who are the major food producers. The government could help them to (1) expand the market for farm products, (2) understand the marketing system, and (3) reduce the cost of marketing farm products.

Further, the physical functions of the marketing system in Africa, especially the storage and processing facility, is grossly inadequate. Most farmers in Nigeria, for instance, dispose of their grains and other farm produce shortly after harvest for fear of rodent attack, not because they are in urgent need of cash. In this regard, appropriate technology should be employed to develop good storage facilities, taking into account the social and climatic conditions in Africa.

Finally, the article offered some short- and long-term measures to alleviate food insecurity in Africa. These measures, however, should be applied with caution, taking into account the social and policy environment of each country. Only then can the desired result be attained.

Egbeogu Maduabuchi
Nigeria, Africa

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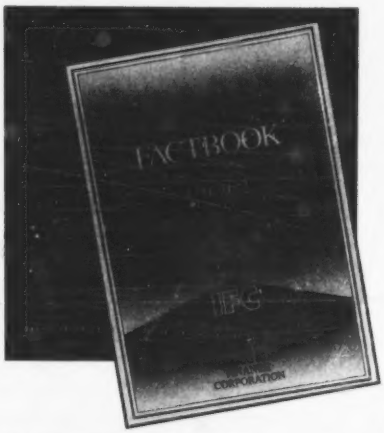

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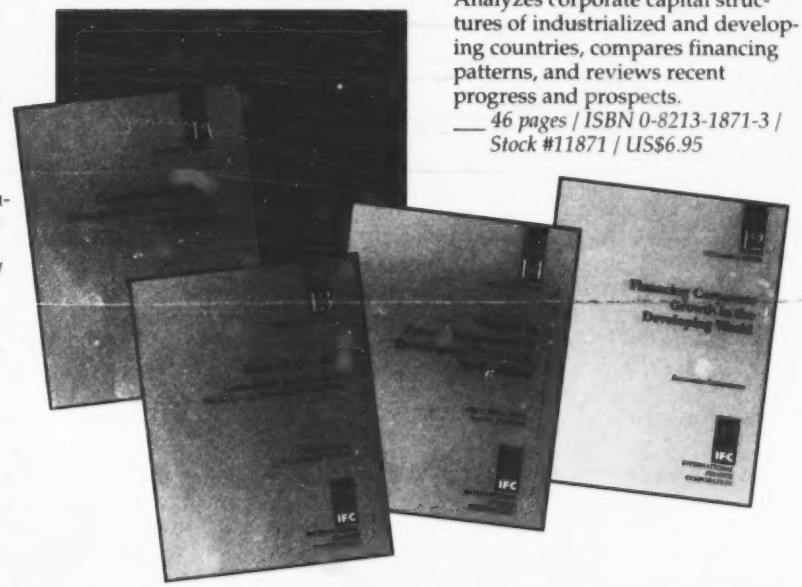

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